Exploring the role of the lecturer in developing self-regulated learning skills in students

A research report submitted by

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DECLARATION

I declare that this research report is my own original work and that all sources have been accurately reported and acknowledged. It is submitted for the degree of Masters of Commerce to the University of Witwatersrand, Johannesburg. This research has not been submitted before for any degree or examination at this or any other university.

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Date

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ABSTRACT

This paper reports the findings of an action research intervention designed to explore the student experiences of a lecturer's role-modelling specific cognitive self-regulated learning (SRL) skills on third year Financial Accounting students' motivation and strategies for learning. The intervention involved a series of enrichment tutorials with a pilot group of Financial Accounting III students at the University of the Witwatersrand, Johannesburg. A mixed methods research approach was used in the study. Qualitative data was collected in the form of verbal and written feedback from group participants and the lecturer's research diary. Quantitative data was gathered by means of the Motivated Strategies for Learning Questionnaire (MSLQ), which was used to measure the students' motivations and strategies for learning before and after the intervention. The intervention involved a lecturer role-modelling specific learning skills through the use of active learning activities. The skills role-modelled focussed on the following MSLQ learning strategies: rehearsal, organisation, elaboration, critical thinking, meta-cognitive self-regulation, and time and study environment management. Results suggest that role-modelling in an active learning environment does help students to implement SRL skills and experience the value of using the skills. Students reported making changes to their learning approaches to Financial Accounting III as a result of the intervention. Additionally the study identified the need for students to be taught the academic discourse of financial accounting within the course content.

KEYWORDS

Self-regulated learning, accountancy education, lecturer role-modelling, action research, cognitive learning strategies, active learning, academic discourse.

Contents

Chapter 1 - Introduction

1.1 Background to the research problem

For the past five years I have been concerned about the poor performance of Financial Accounting III students. Many students are unable to cope with the increasing workload and the complexity of accounting and related subjects in their third year of study for a Bachelor of Accounting Science degree with the University of the Witwatersrand's (Wits) Faculty of Commerce, Law and Management. The pass rate in Financial Accounting III has not improved significantly in spite of numerous attempts by staff members to improve the academic performance of the students. While students may work consistently hard, many find it difficult to develop an effective approach to learning Financial Accounting III (FA III). Thus, some students repeat the course more than once.

Gradually I have become aware of several stumbling blocks which impact on students' inability to learn effectively in FA III. Language is a major stumbling block: both the professional jargon and the difficulties inherent in learning in a language other than the student's mother tongue. A number of researchers in the field of academic literacy have identified the impact of having to learn in a language that is not your mother tongue (Paxton, 2007; Sartorius and Sartorius, 2013; Sulkowski and Deakin, 2009). Approximately half of the students enrolled for FA III over the last 5 years do not speak English as a first language. The language issue is further compounded by the fact that the lecturers teaching on the course are mainly first language English speakers (Cross et al., 2009; Hay, 2008; Sartorius and Sartorius, 2013).

International Financial Reporting Standards (IFRS) are the accounting principles set by the International Accounting Standards Board for application by any entity preparing annual financial statements in accordance with IFRS. Students have difficulty in understanding the technical language used in the IFRS. This problem increases for students who do not speak English as a first language. FA III builds on and assumes prior knowledge obtained in the preceding two years. Students are now required to address accounting for complex transactions in terms of principles and concepts required by IFRS. Lecturers need to teach students how to develop an awareness of the judgements needed when applying IFRS (Jackling, 2013; Jackling et al., 2013). This helps prepare students to take their academic knowledge (abstract context) and apply it to "real life" scenarios (concrete context), as they

will be required to do in their professional capacity. The majority of the lecturing staff are qualified Chartered Accountants. While they have a strong technical knowledge, most of them do not hold teaching qualifications. As a result many of them are not in a position to help students develop effective learning approaches towards FA III.

A poor secondary education system, which does not prepare students for tertiary education, is another stumbling block. At university, students are expected to be independent learners, but many of them have never been taught how to learn on their own (Cross and Carpentier, 2009; Cross et al., 2009). Self-regulated learning (SRL) is an approach to learning based on learners taking responsibility for and managing their own learning. Few students have a natural ability to learn independently and few teachers equip them with the skills to learn on their own (Zimmerman, 2002). According to researchers, students can be helped by teaching them SRL skills, and this in turn can lead to increased student motivation and academic achievement (Pintrich, 2004; Silén and Uhlin, 2008; Zimmerman, 2002). The difficulties identified with student learning highlight the need for lecturers, such as myself, to teach students specific learning strategies in FA III.

1.2 Purpose of study and research question

The purpose of this research is to investigate how FA III students respond to an intervention which attempts to raise their awareness of their own learning strategies and help them to acquire strategies that improve their ability to learn. This study researches the impact of a lecturer, role-modelling specific cognitive SRL skills on students' motivation and strategies for learning in a three month intensive active learning enrichment program in FA III.

The research question in this study is: How do students respond to a lecturer introducing and role-modelling specific cognitive skills of self-regulated learning in FA III in an active learning environment?

1.3 Significance and contribution of study

Given the concerns about students' ineffective learning approaches and their resulting poor performance in FA III, it is hoped that the study will provide information for lecturers about students' learning approaches and whether or not students can be taught to adopt new learning strategies. If the role-modelling of SRL strategies results in improved student performance, this approach may be of interest to colleagues at Wits and elsewhere and can possibly lead to improvements in teaching practice. Ultimately it may have a positive impact on the general academic performance of students. In addition, this study can add to the body of knowledge on the mediation process between tutors and students within the South African context.

Chapter 2 - Literature review

I have based the intervention used during this research on the theoretical framework of Self-Regulated Learning (SRL). The intervention involved the role-modelling of cognitive learning strategies and skills through the use of a student-centred teaching approach in order to encourage the development of higher order thinking skills (Biggs, 1987; Leveson, 2004). These strategies included skills to teach students how to learn and understand the academic discourse of financial accounting. I used active learning approaches to teach the students these skills. The following questionnaires were used to raise student awareness of their learning styles and study behaviours: the Motivated Strategies for Learning Questionnaire (MSLQ), the Index of Learning Styles Questionnaire and the Triads Personality Indicator for Students. At the end of the intervention students completed the MSLQ again to determine whether the intervention led to changes in students' motivations and strategies for learning in FA III. A brief description of teaching approaches, active learning, academic discourse, SRL, the questionnaires used, and the way in which the literature supports their use in addressing the research question in this study, follow below.

2.1 Approaches to learning and teaching

The process of SRL requires a student to move from rote learning or simply remembering, to developing higher order thinking skills, such as understanding, applying, analyzing, evaluating and creating (Biggs, 1987; Bloom, 1956; Forehand, 2005; Sharma, 1997). In order to develop higher order thinking skills a student needs to think meta-cognitively, the students need to reflect on and evaluate their own individual learning process (i.e. to learn about how their learning takes place) (Biggs, 1987; Dison, 2012). Meta-cognitive reflection requires a student to reflect on the learning skill used and evaluate whether the use of the skill has led to a desired learning goal. The students may then find it necessary to make adjustments to their learning strategy in order to achieve a desired learning goal and the learning cycle is then repeated. Meta-cognitive reflection is an integral part of the SRL cycle as discussed in section 2.3 below.

Leveson (2004) broadly divides approaches to teaching into two categories. Firstly, a teacher-centred/content-oriented approach, which involves the transmission of facts and procedures only. Secondly, a student-centred, learning-oriented approach, which encourages students to develop their own judgement and possibly change their perspective with regard to their learning approach. A teacher-centred approach is more likely to promote a surface approach to learning, through memorising and reproducing facts (Biggs, 1987), whereas a student-centred approach, assists students in developing their own understanding of the content, through allowing them to relate different concepts to one another, and by helping them transfer this knowledge to a real life context (Leveson, 2004; Sharma, 1997; Trigwell and Prosser, 1991).

Two of the problems identified with student learning in FA III are firstly, that students struggle to transfer their knowledge to a real life context; and secondly, that students do not make their own notes, which would develop their understanding of a topic. Therefore the intervention made use of a student-centred approach, to role-model strategies which would enable the students to develop the skills to overcome these problems.

An approach which I role-modelled in the intervention to assist students in developing the use of judgement, was based on an education initiative of The International Accounting Standards Board (IASB). The initiative is referred to as a “Framework Based Approach to teaching IFRS” (IFRS Foundation, 2014; Jackling, 2013). The purpose of the Conceptual

Framework (CF) is to set out the principles and concepts that should be applied when preparing financial statements, and is the basis from which the individual IFRS are developed. Framework based teaching relates the concepts and principles in the CF to a particular IFRS requirement that is being taught. One of the reasons for teaching the students to apply the CF to a scenario is to develop the use of judgement. Students cannot learn to develop judgement skills if they follow a rote learning approach (Jackling et al., 2013). Because judgement skills pertain to cognitive SRL, a student-centred approach was adopted in the intervention

Since a student-centred teaching approach is considered to promote the learning of higher-order skills, it requires students to become personally involved in their own learning. Felder and Brent (2009) refer to active learning as "learning by doing" and consider it to be anything course-related which involves students in doing something, rather than passively sitting watching, listening or making notes. In a study of second year accounting students in Australia, Sharma (1997) found that most students externalise learning, rather than becoming personally involved in the learning process. Therefore, to foster student participation, SRL skills were taught throughout the intervention, by means of active learning activities. FA III students who have developed SRL skills will be able to become personally involved with their learning and gain the ability to develop higher order learning skills independently (Felder and Brent, 2009; Prince, 2004).

2.2 Academic discourse

One of the problem areas identified is that FA III students need to acquire the language of the financial accounting discipline. Disciplines like science and mathematics require students to learn a new language because these disciplines use terminology which is different from everyday language (Rollnick, 2000). Financial accounting is also a discipline which uses discipline specific terminology. Therefore both first and second language students need to learn a new language when studying financial accounting. Students need to be able to speak and write in a particular discipline, in a manner appropriate to that discipline (Rollnick, 2000).

To communicate effectively, FA III students also need to be familiar with the financial accounting environment and the types of transactions that take place there. For students to learn the terminology, discipline-specific writing skills should be taught explicitly and integrated within the teaching content. Rollnick (2000) recommends a teaching approach that facilitates student learning by assisting, supporting, and guiding, without giving students the answers. In a study by Fradd and Lee (1999), it was noted that students who had a comprehensive science knowledge and vocabulary, tended to use a reasonable amount of language, spoke precisely using specific vocabulary and used strategies related to the task. FA III students need to develop a comprehensive knowledge of the subject content and its associated vocabulary to communicate effectively. Therefore, the intervention involved role-modelling the following skills with students: to identify and analyse the economics of a transaction; to develop an understanding of FA III vocabulary; to make their own notes on a topic; and to practise answering discussion questions.

2.3 Self-Regulated Learning

SRL is most simply defined as the ability to learn on one's own, which is vital to becoming a life-long learner. More specifically SRL refers to a student's ability to actively direct their own learning process through (a) determining learning needs, (b) setting learning goals, (c) identifying resources for learning, (d) selecting and implementing specific learning strategies to achieve goals and (e) evaluating their output (Pintrich, 2004; Silén and Uhlin, 2008; Zimmerman, 2002).

In the following section, I am going to provide background on SRL processes and how they might help students become independent learners. Then I will discuss how lecturers might role-model these processes/skills for students. Finally, I will discuss how we might measure SRL strategies.

SRL is made up of three components which are of a motivational, behavioural, and intellectual nature (Zimmerman, 2002). These three components interact within the structure and function of self-regulatory processes throughout the learning process. The structure and function of self-regulatory processes may be viewed in terms of three cyclical phases, as depicted in Figure 1. In the following sections the application of the SRL cycle is explained

with reference to how a student studying FA III would make use of it in the course of his/her studies.

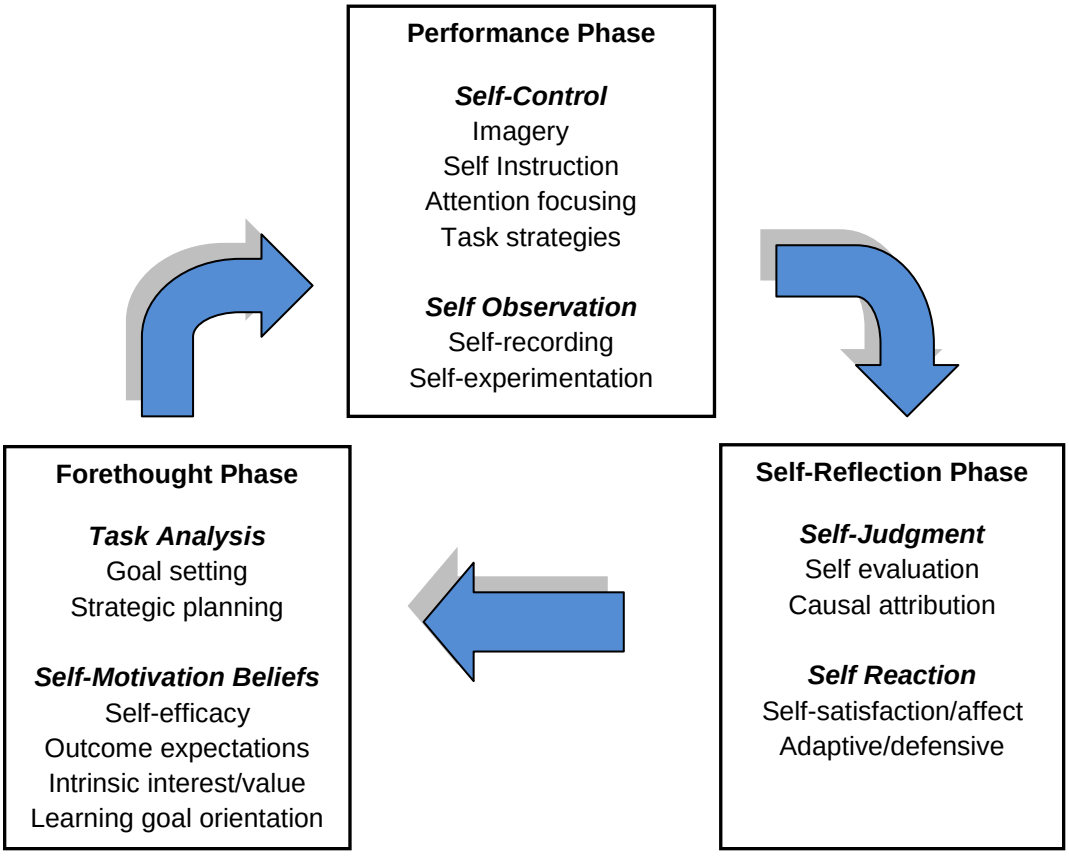

Figure 1. Phases and Sub-processes of Self-Regulation

Forethought Phase (Planning phase)

The forethought phase comprises beliefs and behaviours that should occur before learning commences. During this phase a FA III student would set a specific learning goal for him/herself, such as to master the IFRS standard on accounting for Leases. A student's self-motivation will influence the type of goals that are set and how well he/she plans his/her learning strategies to achieve these goals. There are four types of beliefs that will affect a FA III student in this phase, viz. self-efficacy, outcome expectations, intrinsic interest and learning goal orientation. Self-efficacy, is a student's belief in his/her own capability to master the IFRS standard on accounting for Leases. A student's expectations of the personal consequences or opportunities that he/she can gain from learning to master this topic, such as being able to perform well in a test question on lease accounting, leads to outcome expectations. Intrinsic interest is the extent to which a student values learning for its own

merit rather than because it is required. An example may be to master the IFRS standard on accounting for Leases in order to prepare financial statements. Learning goal orientation is the extent to which a FA III student places value on learning in FA III, simply because he/she finds the entire course interesting and desires to master it (Bandura et al., 1996; Schunk, 1991; Schunk, 2003).

The next step would be to select and plan an appropriate learning strategy to achieve this goal (Wood and Locke, 1990). An example of an appropriate plan for a FA III student might include using the following specific skills to attain the goal. First, read the standard and identify any unfamiliar words or terms. Second, look for definitions in the course notes, or consult with the lecturer, or a peer. Third, find an example that explains the term. Fourth, make notes that combine all sources of information on the topic e.g. IFRS, course notes, lecture notes and tutorial questions.

Performance Phase (Monitoring phase)

The performance phase comprises specific learning processes that occur during the implementation of learning strategies and behaviours. Self-control and self-observation are the processes that should occur during this phase (Bembenutty, 2011). Self-control includes the use of meta-cognitive learning strategies and skills. Meta-cognition is defined as awareness of and knowledge about one's own thinking (Zimmerman, 2002). Thus, learning meta-cognitive skills allows students to purposefully drive learning activities.

Self control tasks might include the following strategies. Self-instruction may involve the use of a dictionary, or web search engine, or may be attempting to explain a principle in the student's own words. Attention focusing refers to managing the physical environment by studying at a desk in a quiet space. Task strategy might include the use of mind maps to make a summary, or maybe explaining principles to a peer.

Self-observation involves a student monitoring the actual time required to master the IFRS standard on accounting for Leases. By doing that, the student learns to set aside sufficient time for completing similar tasks in the future. A FA III student might also experiment with different methods of making notes, to determine which method works best for him/her. Self-monitoring may also occur, whereby a student consciously tracks his/her own progress in applying a specific skill or strategy. An example of self-monitoring may occur when the

student practices applying the principles he/she has learned by first attempting a simple example, followed by a basic tutorial question, and finally a complex question. The student would only move to the next application once he/she has mastered the preceding one. This could be achieved by the FA III student marking his/her attempts and identifying anything done incorrectly. He/she should then refer to the IFRS to determine what he/she failed to understand and why he/she did not get the correct answer. Alternatively a FA III student may confirm understanding of a principle by explaining it to a lecturer or a peer (Zimmerman and Martinez-Pons, 1990).

Self-reflection Phase

The self-reflection phase occurs after each learning effort and comprises two processes referred to as self-judgement and self-reaction. One aspect of self-judgement is self-evaluation, where a FA III student compares his/her own performance with someone else, such as a role-model in the form of a peer or a lecturer. The comparison may also be against an absolute standard, such as attempting a tutorial question and comparing the answer with the suggested solution. Learners should compare their performances to processes or issues they can control so that they can modify them if they need to do so. The other aspect is referred to as causal attribution, which comprises a FA III student's beliefs about the reason for his/her failure or success. It relates to the student identifying what he/she knows or doesn't know, such as when marking his/her answer to a tutorial question, noting errors and then identifying why they were incorrect by referring back to the IFRS principles.

Self-reaction comprises two aspects: firstly, a student's feelings of self-satisfaction/affect, and, secondly, whether a student's response to his/her performance is adaptive or defensive. A FA III student will be more motivated to learn when he/she derives satisfaction from his/her learning performance, such as when he/she is able to answer a tutorial question, or when he/she performs well in a test. The student will feel de-motivated when his/her satisfaction from learning decreases, such as when he/she has spent considerable time preparing for a test only to obtain a low mark. A defensive response may result in a FA III student attempting to protect his/her self-image by withdrawing from, or avoiding learning in that area, such as not attending, or preparing for, lectures or tutorials. On the other hand, an adaptive response may result in the student making adjustments to his/her method or strategy for learning, in order to improve his/her effectiveness. For example, a student may ask a peer

who performs well in FA III, what strategies or methods he/she uses to learn FA III (Zimmerman, 1989).

From the preceding discussion it can be seen how all three components, (motivational, behavioural, and intellectual learning strategies) interact with each other throughout the learning process, in order for a FA III student to become a self-regulated learner. As very few students are able to master SRL by themselves, there is a need for lecturers to encourage students to set goals for their learning in FA III. Lecturers can do so through teaching specific cognitive strategies to the students by means of role-modelling. Such an approach should lead to increased motivation and effectiveness in students' approach to learning.

2.3.1 Role-modelling of SRL behaviour

Research indicates that for students to develop SRL skills and knowledge, the teacher's role needs to change from simply transmitting knowledge (a teacher-centred approach) to encouraging students to learn how to learn (a student-centred approach). The student-centred approach involves role-modelling, learning strategies or skills and working with students while they develop the skills by themselves. (Abdullah, 2001; Coetzee and Schmulian, 2012; Kek and Huijser, 2011; Kiewra, 2002; Pintrich, 2004; Silén and Uhlin, 2008; Van Eekelen et al., 2005; Zimmerman, 2002).

Role-modelling has been addressed in more detail because I (the lecturer) used the role-modelling of cognitive SRL skills extensively throughout the intervention. FA III requires students to learn how to apply IFRS rules and principles to different scenarios, i.e. to solve problems. Problem solving requires the development of thinking skills and one of the ways to learn these skills and their application, is through observation of someone role-modelling the decisions, rules and strategies as they solve a problem (Jackling et al., 2013).

Learners are more willing to attempt using role-modelled skills when they see others successfully using such skills. The purpose of role-modelling in this study was to build a sense of self-efficacy: enabling the FA III students to believe they could use the skill successfully on their own; and that they could communicate knowledge about rules and strategies effectively. Bandura (2009) contends that guided mastery is one of the most

effective methods to develop SRL skills and strategies. This method comprises three consecutive steps: enabling role-modelling, guided practise and a graduated transfer program.

Enabling role-modelling

Enabling role-modelling is the first step of guided mastery and involves teaching strategies and skills by role-modelling them. A lecturer applying an enabling role-modelling approach in FA III, would break complex skills into sub-skills. For example, a lecturer would teach FA III students to make their own notes from an IFRS standard by breaking the process into several steps and then role-modelling each step separately, for the students. Once time has been spent developing the sub-skills, they can then be combined into a complex strategy where the students make their own notes. Then students could transfer the skill of writing their own notes to other third year subjects.

In order to teach reasoning skills through cognitive role-modelling, the modeller must verbalise his/her decisions and actions, and be explicit about how to apply knowledge in solving the problem. For students to learn how to think and reason through a situation, they need to observe the complete thought processes (Bandura, 2009; Smith, 2001). During this process, the lecturer should speak about strategies to handle the following difficulties: managing wandering thoughts and unsettling emotional reactions; how to recover from mistakes; and how to motivate themselves. By directly addressing these needs, students learn to overcome adverse experiences, instead of simply giving up when problems arise (Bandura, 2009).

Guided practise

The second step presents learners with the opportunity to practise the skills taught in the first step. The lecturer should provide the students with feedback on their performance, within a safe environment where students are not afraid of appearing inadequate or of making mistakes. For example, a FA III student may be given the opportunity to practise the skills role-modelled by explaining a principle to a fellow participant and then discussing the principles involved. Or FA III students may be given a discussion question to answer, which the lecturer marks and provides detailed, written feedback. A lecturer may also role-model a few short examples with students, discussing the approach, applicable principles, and correcting errors. The purpose of this exercise is to help students detect and correct

mismatches between knowledge and its application, as well as to persevere with difficult situations.

Graduated transfer program

The third step is to put the strategies into practice in situations where learners are likely to be successful. Applying newly acquired skills successfully helps students to believe in themselves and in the value and effectiveness of their new skills. After the skills have been role-modelled, students should spend time practising the application of those skills on their own. Once a FA III student has attempted a question, a discussion should be held highlighting the skills used and the accounting principles which should have been applied to the question.

2.3.2 Measuring SRL behaviours and strategies

As the purpose of this research study is to determine the impact of role-modelling SRL skills on students' SRL behaviours and strategies, it was necessary to raise awareness of SRL skills and then to measure the students' behaviours and strategies. One of the ways to increase the awareness of learning behaviours is through the use of questionnaires, which require students to answer questions about their learning behaviours. The questionnaires used in this study, The Motivated Strategies for Learning Questionnaire (MSLQ), the Index of Learning Styles (ILS) questionnaire and The Triads Indicator for Students questionnaire are, detailed below.

Motivated Strategies for Learning Questionnaire (MSLQ)

The Motivated Strategies for Learning Questionnaire (MSLQ) is a self-report instrument that was designed to measure undergraduate students' motivation and self-regulated learning in relation to a specific course (refer to Appendix A3). This questionnaire was developed by Bill McKeachie and Paul Pintrich using a social cognitive view of motivation and SRL, which assumes that students' learning and motivation strategies may differ, depending on the nature of the course (Artino, 2005). The purpose of the intervention was to raise students' awareness of the SRL process and to determine the effect of teaching specific cognitive learning strategies of SRL by role-modelling (Payne and Israel, 2010; Pintrich, 1991; Pintrich, 2004).

Therefore, it was considered appropriate to use the MSLQ to measure students' learning strategies and motivations.

The MSLQ is an 81-item, self-report instrument comprising of two categories: the motivation scale and the learning strategies scale. The motivation scale contains 31 questions that assess, with respect to a specific course, students' goals and value beliefs, their beliefs about their ability to be successful, and their anxiety towards tests. The motivation scale is divided into six sub-scales as shown in Table 1. The learning strategies scale contains 50 questions that assess students' use of different cognitive and meta-cognitive strategies with respect to a specific course of study. It also includes 19 items addressing student management of different resources. The learning strategies scale is divided into nine sub-scales as shown in Table 1.

Motivation sub-scales	Learning Strategies sub-scales
1. Intrinsic Goal Orientation	1. Rehearsal
2. Extrinsic Goal Orientation	2. Elaboration
3. Task Value	3. Organization
4. Control Of Learning Beliefs	4. Critical thinking
5. Self-Efficacy For Learning And Performance	5. Meta-cognitive Self-Regulation
6. Test Anxiety	6. Time/Study Environment Management
	7. Effort Regulation
	8. Peer Learning
	9.Help Seeking

Table 1: Components of the MSLQ scales adapted from (Artino, 2005)

The MSLQ was used in a study conducted at the University of the Witwatersrand to explore the relationship between academic performance and learning strategies and student motivation on a research design and analysis course in the Department of Psychology (Payne and Israel, 2010). The study found that learning strategies and motivation are positively associated with academic performance. These authors suggest that students can be taught to use different and appropriate learning strategies. My research attempts to teach FA III students to place value on working and studying independently by making them aware of SRL and by modelling specific SRL skills. Such an approach should allow the FA III

students to experience the benefits of using these skills themselves and hopefully will result in their adopting these skills in the future.

The MSLQ was also used in another study to examine the effect of problem-based learning and project-based learning on students' SRL strategies (Stefanou et al., 2013). Both of these learning environments are student–centred, which is discussed in 2.2 below. Stefanou et al. (2013) found that although the overall motivations and learning behaviours of these two learning environments were not statistically different, there were differences within the individual motivation and learning subscales of the MSLQ (listed in Table 1. above). The study concluded that different types of student–centred learning environments may support different, specific, motivation and learning strategies. Thus instructors should select an active learning approach that is best aligned to the specific cognitive learning strategy they would like to see students develop.

Index of Learning Styles (ILS) questionnaire

Soloman and Felder (2009) developed the Index of Learning Styles (ILS) questionnaire to assess learning preferences based on the four dimensions of the Felder-Silverman learning styles model (refer to Appendix A5). The Felder-Silverman model was designed to provide a basis for instructors to create a teaching approach addressing the learning needs of all students (Felder and Spurlin, 2005). As the ILS provides an indication of an individual's learning preferences, it was used at the beginning of the intervention to make the participants aware of their individual learning style and to indicate possible strengths and habits that may hinder their learning. This is appropriate because students need to be aware of their own learning processes to become self-regulated learners.

Triads Indicator for Students questionnaire

The Levine (1999) Triads Indicator for Students questionnaire was used at the beginning of the intervention to raise the participants' self-awareness of their current learning behaviours and to discuss which behaviours aid, and which behaviours hinder, their learning (refer to Appendix A4). The questionnaire categorises study behaviours into three groups: attacher, detacher, and defender, which correlate with the three areas of SRL: motivational, intellectual and behavioural, respectively. The students need to be aware of their beliefs, attitudes and behaviours toward learning, in order to correct and improve their learning strategies.

Chapter 3 - Data and method

3.1 Overview of method

A mixed methods, exploratory, action research methodology has been used due to the social context of the research problem (Creswell and Plano-Clark, 2011). Johnson et al. (2007, p.124) define mixed methods research as: "the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration". Quantitative data was collected before and after the intervention, with qualitative data being collected during and after the intervention. This is referred to as a sequential mixed method approach (Creswell, 2009).

Action research is central to the research process and is discussed in greater detail in section 3.1.2. below. The use of action research within the research process has resulted in the collection of firstly, qualitative data, in the form of verbal feedback from group participants in the form of a focus group discussion, facilitated by myself and a colleague (who also facilitated the first tutorial session) and the supervisor; written feedback from group participants; and a research diary. Secondly, quantitative data was gathered in the form of a questionnaire. A mixed method research methodology is therefore appropriate to integrate the findings of the two data sets with each other, in order to substantiate and provide a deeper understanding of the impact of the intervention on the students' SRL skills.

3.1.1 Participants and ethics

Thirty four students were specifically selected and invited to take part in the intervention. Students were selected for the following reasons: Twenty four of them were students who had received a bursary from the South African Institute of Chartered Accountants (SAICA) Thuthuka programme and who come from previously disadvantaged backgrounds. Five of these students were repeating FA III. The FA III Thuthuka students are all second language English speakers. They were invited to be part of the research group as part of their additional support programmes, to help them cope with the FA III course.

Of the remaining ten students invited, six were repeating FA III and had been trying to develop a different approach to studying FA III. Three of these students are first language English speakers, and the remaining seven are second language English speakers.

Each of the thirty four students was e-mailed an invitation to join the enrichment tutorials and to attend an information session. During the information session the purpose of the research project, student involvement in the project, and the potential benefits of taking part in the enrichment tutorials were discussed with the students. A participant information sheet and a research consent form were handed to each student (refer Appendix A2). Of the thirty four students invited to participate, three students neither attended the information session nor participated in the research group. One student preferred to work alone and was uncomfortable being recorded, and therefore decided not to participate. Two students took part in the enrichment tutorials and completed a research consent form but did not complete any of the questionnaires. As a result, only twenty eight students participated in the entire intervention.

Participation in the research group was voluntary and was in addition to students' normal lectures and tutorials on the course. Students were also made aware that there was no material gain nor would any marks be allocated to them for participation in the group. Rather, the potential benefits related to the study were to: learn about their own approach to learning in FA III, learn new skills to approach the subject and be able to use the output from the tutorials in studying for examinations in FA III and FA IV.

Ethics clearance has been obtained from the Human Research Ethics Committee (Non-medical), protocol number: H13/08/08 (refer to Appendix A1). Privacy and confidentiality have been addressed in the research participant information and research consent forms (refer to Appendix A2).

3.1.2 Action research

Action research is concerned with the researcher enquiring into his or her own practice. McNiff & Whitehead (2009) define action research as research in which "The researcher studies and makes claims about what they are doing, in relation with others, and generates

their living theory of practice." In a classroom context, it is a systematic way of identifying problems and improving the effectiveness of a specific approach or strategy in order to improve student learning (Cunningham, 2008). Figure 2. depicts the cyclical nature of action research.

Figure 2. The Action Research cycle. Adapted from Menter, Elliot, Lewin & Lowden (2011).

Doing action research in education involves the following steps shown in Figure 2 above: (1) identifying a problem with regard to student learning; (2) designing plans to address the problem; (3) taking action in teaching, either to improve your own teaching skills and/or influence your students to improve their own learning skills; (4) collecting data about the students experience of the intervention or action; (5) analysing the data collected about what you did in practice to see if something has improved or not as a result of the action taken; (6) updating or modifying your action plan in light of what you have discovered. This point leads back into the action research cycle at step (3) and the cycle repeats as you continue to try to improve your own and/or your students' skills. The final step is sharing what action you have

taken and what you have discovered about the problem with colleagues and others who might be interested or who could benefit from your experience (Du Toit, 2012; Menter et al., 2011; Vozzo, 2011).

A problem with student learning in FA III was identified as the starting point for this research. An intervention based on teaching a group of students, specific cognitive learning skills was carried out by a lecturer (myself), who used role-modelling to teach the specific skills. This process of action research was then analysed to determine whether the students' skills and performance had improved. The results have been written up in this report as a means of sharing what has been discovered about the problem

Action research has been used in the following way in an attempt to address the identified problem:

Identify the problem

- *What is the problem?*
  How can I, as a lecturer, introduce FA III students to self-regulated learning, and model specific meta-cognitive and cognitive SRL skills, so that students adopt these skills and improve their performance on the course?
- *What is the background to the problem?*
  This has been outlined on pages 3-4 in the description of the background to the problem.

Planned intervention

Introduction

The intervention in this study comprises two action research cycles and involved myself, as a lecturer, working with a pilot group of thirty four students and teaching a total of ten 1 ½ hour enrichment tutorials during the second semester, from August 2013 to October 2013. These tutorial sessions were subsequently divided into two action research cycles. At the end of the first cycle (the end of the third teaching block), a group feedback session was held and the subsequent feedback was then used to make changes to the strategies which were taught and role-modelled during the second cycle. At the end of the second cycle (the end of the fourth teaching block), another group feedback session was held to explore the students' learning experience of the enrichment tutorials.

First action research cycle

First tutorial session

The objective of the first tutorial session was to have the students complete the MSLQ (Artino, 2005), to introduce the students to the principles of SRL, and to raise their awareness of their own learning style and behaviours, by completing and scoring the Triads Indicator for Students (Levine, 1999) and the ILS questionnaire (Soloman and Felder, 2009). A group discussion around these questionnaires was facilitated by a colleague, who discussed their learning behaviours with the students and how this might affect their own learning experience. This colleague also participated in the focus group feedback discussions. The students also identified behaviours that hinder and behaviours that assist their learning. Another purpose of the session was for the students to meet and interact with each other, so that they would feel comfortable working together and asking questions during the tutorials.

Students completed the MSLQ before the start of the intervention and again after the intervention had been completed. This was done to determine whether or not, as a result of the enrichment tutorials, the students' motivations and strategies for learning had changed as a result of the intervention.

Remaining tutorial sessions

During the remaining sessions, I taught the students cognitive learning strategies specific to FA III by means of role-modelling (Bandura, 2009), and by the use of active learning activities (Felder and Brent, 2003; Felder and Brent, 2009). The strategies were based on course material taught during the second semester. The students had already addressed each of the topics in lectures and tutorials before attending the enrichment tutorials.

The main focus of the intervention was to role-model specific cognitive strategies with the students so that they could become familiar with and start to implement these skills in FA III. To achieve this, I used a number of activities within the tutorial sessions to teach the skills in such a way that the students had to actively work and participate on their own, in pairs, and occasionally in groups. I role-modelled each skill for the students by illustrating and verbalising each step and the thought process behind each action. After I had role-modelled the skill, I used short activities to allow the students to practise each step on their own.

A detailed description of the intervention is shown in Tables 2 and 3 from page 23. Four problem areas which had been broadly identified in the background to the problem and the literature review were specifically addressed during the first action research cycle. These problem areas are:

1. Subject is abstract and difficult to contextualise;
2. IFRS language and terminology is difficult;
3. Students do not make their own notes;
4. Making a summary at the end of a topic.

Table 2. Detailed description of the intervention

First Action Research Cycle			
	Problem	**MSLQ Strategy role-modelled**	**Activities**
1.	**Subject is abstract and difficult to contextualise** Many students find financial accounting very abstract and struggle to relate it to the real world. In FA III students learn how to account for the economic effects of many transactions which they have not experienced, nor seen in real-life, and, as a result, find it difficult to contextualise.	**Organisation** **Elaboration** **Peer Learning**	• Before attending the tutorial students were required to spend fifteen minutes in researching newspapers, searching Google for information relating to the topic covered. Students could search for either a financial, legal, business, or economic-perspective related to the topic. I found a short YouTube clip on the topic that would help to convey a visual image which might be relevant to the students. At the beginning of each tutorial, students were asked to share their findings in a general discussion and then I played the clip or shared my own example. • To teach students how to gain an understanding of the context of a specific topic, we spent time identifying the different economic components of a transaction. We also identified the parties to the transaction and their specific actions within an economic context.

	Problem	MSLQ Strategy role-modelled	Activities
2.	**IFRS language and terminology is difficult** Students struggle to read and understand the language of the financial accounting discourse. At a FA III level, this relates to the IFRS which is the source of the concepts, principles and rules taught. Much of the language and terminology is discipline specific and all students need to be taught how to find meaning in that specific context (Rollnick, 2000).	**Rehearsal** **Organisation** **Elaboration** **Critical Thinking** **Meta-cognitive Self-regulation** **Peer Learning**	• During the tutorial, a short discussion was held to address any unfamiliar terms or words in the IFRS that students had previously encountered. • At this point, I directed the students' attention on the need to know, understand and refer to the specific definitions provided in the standard, in order to help them apply a definition to a practical context. • Each student was given the opportunity to explain either: a term, a definition, or principle, to another student. The students were required to put the explanation into their own words, either by writing it down or else by explaining it to their neighbour verbally. The pairs in the group would then share some of their examples with the whole group and we would discuss them together. Following on from identifying the economics of a transaction in 1. above, we then related the topic, or a transaction/s within the topics to the IFRS Conceptual Framework. Specifically, students were asked to identify which definitions of the elements of financial

	Problem	MSLQ Strategy role-modelled	Activities
			statements in the Framework were applicable to the transaction. We did this before identifying the specific standard that was applicable to the transaction.
3.	**Students do not make their own notes** Very few students take time to make their own notes that combine all the sources of learning material available to them on the course: the IFRS standard, the course notes handed out, any notes they have made during lectures and the tutorial questions. Where students do make notes from the IFRS, they merely copy the standard. Many students try to learn the principles by attempting the tutorial questions before learning the principles from the IFRS. They believe it is easier and less time-consuming. The result of this approach is that students struggle to link the IFRS principles to the tutorial questions and	**Rehearsal** **Organisation** **Elaboration** **Peer Learning**	Students were taught that in order to make a set of notes they needed to use all the information sources available: IFRS handbook, course notes, notes they made during lectures or tutorials on the topic. Then using various active learning activities, I role-modelled how to develop a set of notes for a topic in the following manner: • In the first step we looked at the structure of the IFRS standard, specifically drawing the students' attention to the objective, scope and definitions. Students need to be able to name and identify these in order to determine their applicability to an economic transaction. • The second step was to develop a set of notes. We started with the IFRS concept/ principle, then added relevant information from course notes and lecture notes. I also taught students to include specific guidance from the IFRS explanatory guidance, illustrative

	Problem	MSLQ Strategy role-modelled	Activities
	cannot apply their knowledge to a different scenario. Unless students engage with the material for themselves, at a deeper level than "cramming" or rote learning (a surface learning approach), they will not develop the higher order thinking skills necessary to pass the course.		examples and the basis of conclusions. We included references to any class examples or tutorial questions that addressed that concept or principle in our notes. One of the skills that we worked on was writing the information in our own words. The focus was placed on "what does this mean to me?" and being able to explain it to someone else in a manner that they could understand the principle or concept. • Because students do not all have the same learning style, we also worked on possible formats for making notes viz. mind maps, tables, bullet points and the use of colour.
4.	**Making a summary at the end of a topic** Students don't make summaries of a topic once they have completed the topic.	**Organisation** **Elaboration** **Peer Learning**	• I role-modelled how to use the integrated set of notes developed above as a starting point for writing a summary. We discussed that a summary should be made once the topic had been covered thoroughly and that it should include any tutorial notes. • Here students who had made summaries shared them with the group.

Feedback session 1

At the end of the third block the first action research cycle was complete. Feedback was collected from the students through a group interview in which they were asked to reflect on the enrichment tutorials. The questions asked during this session have been included in Appendix 6. This feedback, together with the students' journals and my own reflections, were used to begin a second action research cycle, which allowed me to identify and make any necessary changes to the intervention (tutorials) during the fourth block.

Second action research cycle

Based on the feedback some changes were made to the skills and strategies role-modelled in the second action research cycle. Since students now knew how to write their own notes, time was spent on developing skills to apply their knowledge to a scenario or exam question and on exam technique. Another issue that arose was the development of language skills and writing within the FA III discourse, which students thought should be taught within the course material. The skills taught during this cycle are detailed in Table 3 below.

The problem areas addressed during the second action research cycle are:

1. Students' inability to answer complex questions
2. Students' poor performance in discussion/theory questions
3. Exam technique and time management

Table 3. Detailed description of the intervention

Second Action Research Cycle			
	Problem	**MSLQ Strategy role-modelled**	**Activities**
1.	**Students' inability to answer complex questions** In FA III several principles from different topics are often combined into one question. Students must be able to: - deconstruct the question into its components, - to identify the principles applicable, and - to apply them to the requirements of the question. In the feedback students specifically asked for practise applying principles to questions.	**Organisation** **Critical Thinking** **Meta-cognitive Self-regulation** **Peer Learning** **Test anxiety**	• At the beginning of the tutorial we discussed the context of the topic. Students were given a simple example/s to identify the economics of a basic transaction. Then they also had to explain a principle to a partner. Next we discussed the importance of knowing the principles well, as this would enable them to recognise the principle when it was presented in a complex scenario. • I role-modelled the following specific strategies for analysing a question (which the students had to prepare before the tutorial): - To read the scenario purposefully, thinking about how it relates to their knowledge. - To write down the concept, principle, and/or accounting treatment that came to mind, when reading the question. Students tend to forget to write down such thoughts. - To use pictures and timelines to summarise information within the scenario. Then they could refer back to this

	Problem	MSLQ Strategy role-modelled	Activities
			summary, instead of reading the whole question and thereby saving time. - To connect related information that is scattered in the scenario.
2.	**Students perform poorly in discussion/theory questions** In the feedback at the end of the first action research cycle, one of the issues raised was the need to develop discourse-specific language skills, within the FA III course. I tried to address the development of language here, since students perform poorly in discussion questions. Students write brief notes instead of writing out complete answers to theory questions for tutorials. Many students leave the theory question to the end of a test or exam when they	**Organisation** **Critical Thinking** **Meta-cognitive Self-regulation** **Help-seeking**	• On two different occasions students were given a past test question to complete as a written assignment. I marked each assignment and provided written feedback on the individual students' answers. We then held a group discussion during the tutorial. • During tutorial, I role-modelled the following strategies: Planning your answer: - use the analysis of the question (as per 1. above) to identify the topic/principle being tested; - note the IFRS requirements in two to three words per requirement; - link these requirements to information in the question confirming or disproving the IFRS. Read the required and determine what is being asked. To answer the question:

	Problem	MSLQ Strategy role-modelled	Activities
	are pressed for time and perform poorly in answering the question.		- take each issue from the planning above and discuss it; - for each issue discuss the information in the question and substantiate it by linking the issue to the IFRS requirement; - once a point has been discussed, tick it off • Finally I highlighted the common mistakes that had been made.
3.	**Exam technique and time management** Students requested strategies to help with exam technique during the feedback session at the end of the first action cycle. Students do not complete tests and/or exams because they do not manage their reading time or written time for answering each question effectively.	**Organisation** **Critical Thinking** **Meta-cognitive Self-regulation** **Time and Study Environment** **Peer Learning** **Test Anxiety**	• All of the strategies for answering complex questions in (1.) should be applied to tests and exams • I role-modelled answering a question by: - attempting related sections of what is required, together; - identifying information in the question that does not have to be re-worked. Students often work out information that has been given in the question; - integrating the workings as they complete them into the solution. This skill saves time as students do not have to think twice about what they have done. It also ensures that the answer is written down, and not forgotten when a student runs out of time;

	Problem	MSLQ Strategy role-modelled	Activities
			• I role-modelled a strategy to apply when a student does not know what to do in a question: - identify the economics of the transaction as taught in the first action cycle; - apply the Framework definitions to the transaction; - apply any specific IFRS that you can identify; - If the student is still unsure about what to do, teach him/her how to make a decision and move on. We discussed that spending a lot of time on deciding how to treat a small item was not a wise use of exam time. Such a strategy could result in an incomplete answer and in the loss of marks. • We discussed how much time students should spend on a question in a test or exam. Students should not go over time on a question. We also discussed how to use the allocated reading time (7.5 minutes per hour) effectively. • We held a mock exam and afterwards a feedback session focusing on exam technique and identifying principles, as well as the main problem areas.

Feedback session 2

At the end of the fourth block the second action research cycle was complete. Feedback was collected from the students through a group interview which occurred the day after they wrote their final FA III examination on 30 October 2013. During the feedback they were asked to reflect on the enrichment tutorials and their entire experience. The questions asked during this session have been included in Appendix 7. This feedback, together with my own reflections is discussed in the results.

3.1.3 Timeline

At the beginning of this research project, after determining the specific actions required to answer the research question I planned the following timetable, based on the time available to complete the research process.

Task	**Date**
Meet with students and hand out questionnaire pre-intervention	22 July 2013
Hold 10 weekly 1.5 hour sessions with students	August 2013 – mid October 2013
Participant group feedback 1	Early September
Questionnaire post-intervention	October 2013
Participant group feedback 2	October 2013 after exams
Transcribe interviews, capture questionnaires	November 2013
Analyse data	January 2014
Write up research report	February 2014 – March 2014

3.2 Data collection instruments and process

3.2.1 Data collection instruments

The Motivated Strategies for Learning Questionnaire (MSLQ) was used before and after the intervention to determine whether the motivational and learning strategies of the students' towards FA III changed as a result of the intervention. In terms of the robustness of the MSLQ as a research tool, confirmatory factor analysis of the MSLQ has shown reasonable factor validity and Cronbach alphas for its individual subscales. The MSLQ has also been shown to have reasonable predictive validity to the actual course performance of students (Artino, 2005). Therefore it seems appropriate to use the MSLQ as a means of measuring students' learning strategies and motivations.

The Index of Learning Styles Questionnaire (ILS) and Triads Personality Indicator for Students were used at the beginning of the intervention to raise students' awareness of their own learning styles and study behaviours. I used the data collected from the ILS in planning the enrichment tutorials and attempting to teach the tutorials in a manner that took account of the students' learning styles.

A research journal/diary was kept to record details of the following: my teaching plan for each tutorial session, as well as my observations, thoughts and reflections about what had occurred during each tutorial session (McNiff and Whitehead, 2010; Menter et al., 2011). Each student in the pilot group was also asked to make brief notes of their experience at the end of each session, noting what they found especially useful and what they found unhelpful. The objective of keeping a journal was to encourage the students to reflect on how they had learned to learn FA III and the impact that it had on their ability to process information (Dison, 2012; Zimmerman, 2002)

Two focus group feedback sessions were audio-recorded and transcribed verbatim. A thematic content analysis was undertaken in order to identify and code common themes. A focus group was considered to be especially appropriate for exploratory work, as I was trying to determine the students' perceptions of their experience of the pilot group intervention (Menter et al., 2011).

3.2.2 Data collection process

The MSLQ questionnaire was handed out to the students in the intervention group at the beginning of the first enrichment tutorial session and again at the end of the second group feedback session, after completion of the second action research cycle. Students were required to rate themselves on a 7-point Likert scale from 1 (*not at all true of me*) to 7 (*very true of me*) for each item of the MSLQ. These questionnaires were collected and captured in Excel.

I used my personal research diary to identify possible areas to explore during the focus group discussions held at the end of the first action research cycle and at the end of the second cycle. I also made changes to the sessions held during the second action research cycle, based on the students' comments, as well as on my own reflections.

At the end of the fourth teaching block another group feedback session was held to reflect on their experience of the second action research cycle. Audio recordings were made of both of the group feedback sessions and some of the enrichment tutorials. The audio recordings of the feedback sessions were transcribed verbatim and a thematic content analysis was undertaken in order to identify and code common themes. The analysis was cross checked with the supervisor who was present during the feedback sessions in order to address researcher bias.

3.3 Data analysis

The data was analysed using a mixed methods approach that includes statistical analysis as well as content analysis of the qualitative data collected (Creswell and Plano-Clark, 2011). Both quantitative and qualitative data were analysed to infer the consistency of the findings and to interrogate their significance (Jick, 1979).

3.3.1 The research question: The impact of role-modelling SRL skills on students' motivation and strategies for learning

The aim of the research was to determine the impact of explicitly role-modelling specific cognitive and meta-cognitive SRL skills on students' motivation and strategies for learning, in a three month intensive active learning enrichment program in FA III. To determine the impact of the intervention the following analysis was carried out:

The MSLQ responses of the enrichment tutorial group were analysed into the fifteen subscales, shown in Table 1, as follows (Artino, 2005):

- The six motivation subscales were calculated by summing all of the items within the subscale and then calculating the mean of these items.
- The nine learning strategies subscales were calculated in the same manner as the motivation subscales.
- As some of the items within the MSLQ are negatively worded, it was necessary to reverse-code these items before computing a student's score.

SPSS Statistics version 22 was used to analyse the MSLQ responses for each student in the enrichment tutorial group. Each student's response, before and after the intervention, was compared by means of the Wilcoxon Matched-Pairs Signed-Rank test, to identify whether there were any significant differences in the subscales of the students' pre- and post-intervention. The Wilcoxon Matched-Pairs Signed-Rank test was used instead of a Paired Samples T-test because the subscales were found to be not normally distributed.

The group feedback recordings were transcribed verbatim and a thematic content analysis was used to identify key themes arising from the data. The feedback from the student's research journals was also coded to further understand and interpret the data from the feedback sessions (McNiff and Whitehead, 2009; Menter et al., 2011). This analysis was performed to identify the key themes that those taking part in the intervention had highlighted as important in order to foster SRL. The analysis has also provided information about what aspects of the intervention worked or did not work, as well as information for future interventions using SRL principles.

3.3.2 Assumptions, limitations and delimitations

This study is limited to one specific course (FA III) within a specific university (Wits) context. The focus group of twenty eight students has been chosen by specifically selecting students who receive a Thuthuka bursary and a few students who are repeating FA III. Therefore caution should be exercised in making generalisations for the entire FA III student group.

The MSLQ is a self-report instrument and therefore assumes that the students will be honest in completing the questionnaire rather than providing information that they think the researcher would like or which they consider to be socially acceptable. However the authors of the questionnaire have not found response bias after assessing the reliability of the questionnaire. In addition, some of the constructs being measured, such as goal orientation, are extremely difficult to assess (Artino, 2005). A limitation of the MSLQ is that it has been developed in the United States for students in a Western context. In this study it was used in a South African context for students from very diverse backgrounds.

Chapter 4 - Results

4.1 Introduction

The main purpose of this research report is to explore how students respond to the introduction and role-modelling of specific cognitive SRL strategies. This chapter first presents the results of the comparison of the various dimensions measured by the MSLQ before and after the intervention (i.e. my quantitative discussion). After which an analysis of the group feedback sessions and my research journal are discussed in terms of the problems identified in Tables 2 and 3 (i.e. my qualitative discussion).

4.2 MSLQ

The Wilcoxon Matched-Pairs Signed-Rank test was used to identify whether there were any significant differences in the sub-scales between the results measured pre-intervention and those obtained after the intervention had been completed. The results of the test for each sub-

scale are shown in Table 4. There were no significant differences between the pre- and post intervention results for any of the motivation sub-scales. However, significant differences between the pre- and post intervention results did arise for six of the nine learning strategy sub-scales as shown in Table 4.

Sub-scale	***Z* statistic**	***p* value**
Motivation sub-scales:		
Intrinsic	-0.836	0.403
Extrinsic	-0.991	0.322
Task value	-1.475	0.140
Control of learning behaviour	-0.244	0.807
Self-efficacy	-0.830	0.407
Test-anxiety	-0.739	0.460
Learning strategy sub-scales:		
Rehearsal	-3.195	*****0.001
Elaboration	-3.003	*****0.003
Organization	-2.611	*****0.009
Critical thinking	-2.422	^0.015
Meta-cognitive Self-Regulation	-2.620	*****0.009
Time/Study Environment Management	-2.763	*****0.006
Effort regulation	-0.387	0.699
Peer learning	-1.190	0.234
Help-seeking	-1.239	0.215
***** *p* is significant at a 1% level ^ *p* is significant at a 5% level.		

Table 4. Results of the Wilcoxon Matched-Pairs Signed-Rank Test

The activities used during the intervention to model specific cognitive SRL skills focussed on addressing the learning strategy sub-scales of: rehearsal, elaboration, organization, critical thinking, meta-cognitive self-regulation, time/study environment management, peer learning and help seeking. The intervention specifically addressed only the motivation sub-scale of test anxiety as explained in the detailed description of the intervention in Table 3. There was no statistically significant difference for three of the strategies role-modelled, viz. test

anxiety, peer learning and help seeking. However, there was a statistically significant difference for rehearsal, elaboration, organization, critical thinking, meta-cognitive self-regulation and time/study environment management. These results indicate that the explicit role-modelling of specific cognitive SRL skills does impact students' strategies for learning. Therefore it would seem that SRL skills can be taught to students by a lecturer, role-modelling specific, cognitive SRL skills.

The differences in the remaining motivation sub-scales and the one remaining learning strategy sub-scales were insignificant. These SRL strategies were not addressed directly by the intervention, although they would have been influenced to some degree because of the manner in which behavioural, motivational and intellectual strategies interact during the learning process.

4.3 Analysis of qualitative data

The group feedback sessions and my research journal were analysed with respect to the problems identified and addressed by the intervention as shown in Tables 2 and 3.

Attendance at the enrichment tutorials was voluntary and the tutorials were taught in addition to existing tutorials and lectures for the course. One session was held on a public holiday, one at the end of a test week and another session during the students' September study break. There was an average attendance of 67% at the tutorials. Of the twenty eight students who participated in the intervention, 50% attained an attendance of 78% and above. I was impressed with the students' commitment to be part of the group and their willingness to participate during tutorials. I believe that the non-threatening atmosphere in the tutorials, where most of the students fully participated in the activities, was mainly due to the tutorials being attended on a voluntary basis.

4.3.1 The first research cycle and group feedback session 1

Discussion of the four problems tackled in the first research cycle and the students' feedback on the learning strategies role-modelled.

1. The subject is abstract and difficult to contextualise:

The MSLQ strategies of organisation and elaboration were role-modelled to address this problem. This was done because organisation strategies can help learners to make connections with the information they are learning (Pintrich, 1991). The first skill role-modelled required the students to search for a real life article or example on the topic. The students' initial perception was that this task would be too lengthy. On completion they discovered that it had not been time consuming and helped to provide them with a real-life context for the topic.

Several students found this exercise made the topic more interesting and they started to enjoy learning about FA III. Some of the students' comments were:

"I think that I've definitely seen it a little better, the real world application. I think that's very important because you start to think about it in a more practical way. Like how would you actually approach this, when you are looking at a theoretical concept."

"The articles everyone shared was also enlightening about what was going on out there related to what we study."

Two students who didn't find the real life examples helpful made the following comments:

"A thing I didn't think was all too helpful for me was the real life examples per IFRS. Even though we find the information on the internet, because it's not too detailed, it still doesn't help me understand the IFRS better or make a good link between real life and the IFRS.'

"Going on-line to google topics did not work out for me personally as most of the things on-line are summaries of the topics and do not give you a deep understanding of what's going on in that particular topic. At times they go overboard to discuss things that we haven't done in third year. ln simple terms they are prepared [without] taking into account my needs."

Looking at these comments, it appears that both of these students were expecting this activity to lead to a deeper understanding of IFRS, which was not the purpose of the activity. The objective was to introduce the topic, giving a general idea of some of the aspects of the type of economic transaction to which the IFRS is applied to, and attempting to provide students with a visual picture which would make the application of the IFRS more real for them

(Leveson, 2004; Pintrich, 1991; Soloman and Felder, 2009; Trigwell and Prosser, 1991). Thus, in the future it would be appropriate to ensure that everyone understands the objective of this activity by making it explicit (Pintrich, 1995). On the whole, the examples discussed in the group, did give the students real life contexts and a general overview of the topics being addressed.

I observed other benefits of this activity during the tutorials. One benefit was that the examples generated some very interesting discussions amongst the group and the students started to think more about the topic. Another benefit was that students started to make links between different IFRS standards and discussed which standard might be applicable to a specific scenario. In discussing some of the examples, possible implications for other subjects, such as tax and auditing, were identified. Finally, one of the examples generated a discussion about how a transaction could result in implications for more than one standard. This supports the hypothesis that students can adopt the skill of organisation through role-modelling by a lecturer and thereby learn to connect prior learning to new learning (Bandura, 2009; Pintrich, 1991; Zimmerman, 2002).

2. IFRS language and terminology is difficult to read and understand

The MSLQ strategies of rehearsal, organisation, elaboration, critical thinking and meta-cognitive self-regulation were role-modelled to address this problem. During the tutorials and especially during the feedback sessions, I discovered that many of the students had not read or referred back to the Framework since addressing the definitions of the elements of financial statements in first year accounting. Some students had read the Framework because they were instructed to do so, but never really understood its implications. Those students in the group who were tutoring Accounting I had learned that they needed a thorough understanding of the Framework in order to tutor sections dealing with it. They had discovered that understanding the Framework did help them in FA III as well. When the lecturer (myself) specifically role-modelled how it applies to a transaction, students began to make links and see the benefit of knowing and being able to apply the Framework (Bandura, 2009; Pintrich, 1991; Smith, 2001; Zimmerman, 2002).

Some of the comments made about the Framework:

"By the sounds of it, no-one actually read it in any event. But you need to explain exactly what that means, ... I think the lecturer was also now referring back to the framework. So I started to read that, to see exactly what he said, because I never read that before."

"A lot of time people say that's all in the framework, I never realised that before. Now I am saying that's really important. Even in second year it was never like, this is the framework. Now obviously the definition of assets and stuff is so emphasised but if it wasn't really like assets, you don't know where that fits in. Actually it's very difficult, conceptually. I never actually figured this is why I was doing this. Definitely, that's why I see the framework, the assets, liabilities with the leases, doing that in lectures really helped."

"I read in first year, I was just cramming in first year. Second year I didn't read it, I know it was in the pack but I only did the standards we were doing in class. I didn't find it worth doing something we were not going to be tested on."

This last comment was noted and discussed with the FA lecturers, where it was decided that the testing in all courses needs to include some testing of the application of the Framework. This would encourage students to study the framework from the first year of their degree.

Another task that students were required to prepare before a tutorial was to identify words or terms which they did not understand in the assigned IFRS standard. Students then had to look for a definition in a dictionary or by searching the Web, or by reading their class notes, or by asking someone about it. Most students found that there were parts of the IFRS that they were able to read. However they learned it was also important to read purposefully, for understanding, and not just for the sake of reading.

Student comments on reading the IFRS were as follows:

"I read it before ... it was the first topic and so I referred to it when I did it ... I didn't read it to understand until right now."

"... it helped also reading through the illustrated examples and trying to put the whole context together."

"Back in first year I didn't read to understand, I think I was reading just for the sake of it."

"I now like reading the IFRS, because before I was [thinking] like, whoa! This standard is so long! Then (before I actually even read a standard) I'd actually first look [to see] how long is it."

"... in terms of being evasive [I] actually didn't do things and now I go through the objective, the scope and measurement because it really helps [me] now."

The need to be taught the language of financial accounting was an issue that the students identified during the first feedback session. This was something that they found frustrating about FA III. Some of the comments made are as follows:

"I thought accounting was more numbers, so I thought it's just English [referring to English in high school], it's not going to help and then I get here [university] now it's just writing English with accounting. You need to read tax as well, reading the legislation in itself you need to be able to understand it." (This comment was made by a second language speaker.)

"I mean my English is particularly strong and I've done a degree in drama.... Sometimes if I read the tax legislation I [struggle]. Like it's an entirely different language, you cannot call that English. It's different, it's entirely different, so regardless whether your English is strong or not, everyone struggles with it. It's like multiple choice has different English as well, I believe it's all different. Maybe[we need to be shown] just how to read and understand what we are reading." (This comment was made by a first language speaker.)

In light of these comments, students were asked if it would help for all first year students to be required to take a compulsory English course. Students felt that this would not help them as they tend not to take such courses seriously. Their opinion was that the language of financial accounting should be integrated as part of the subject and directed at the subject content each year.

"...it's not taken seriously even when people get sent off to do Law it's not taken in the same light. So even though that was actually a skill that you needed for auditing, it's not taken seriously. So it needs to be integrated into sort of accounting or something because it's unique, very specific."

"It's related to the discourse of the subject."

"So if you integrate it into the course, in a capacity that is also taught by an accountant, then they [see] where the problems lie better than an English person, [who] won't understand where the problem lies."

"For me it's helping us to understand, if we can just get behind the accounting-speak, then it would be more helpful. So English on its own is helpful but at the end of the day people want to pass FA III. If someone asks you why the tax legislation is written, it's been written for the profession, so if you bring in English, it needs to be that English."

The above approach suggested by the student feedback is supported by (Rollnick, 2000), who proposes that discipline- specific writing skills be integrated within the course content, and needs to be taught to students explicitly. Students also need to be familiar with the financial accounting environment and the type of activities that take place within it. This is the approach that I role-modelled for the students during the tutorials, especially when analysing the scenario in a complex question.

During the feedback session students identified, that explaining a concept or principle to someone else in their own words, was a benefit which helped them gain a better understanding of it.

"Well I haven't read it since first year, I think I read through the text book, touched on the conceptual framework and as the years went by, I've been trying to fill in the missing gaps. This year I'm tutoring Accounting I, it has helped me because I have to go back and find what's said. Now when I'm explaining it to someone else, it just makes it even more worth doing."

3. Students often do not make their own notes and as a result, struggle to link the IFRS to the course, to lecture notes and tutorial questions:

The MSLQ strategies of rehearsal, organisation and elaboration were role-modelled to address this problem. Students' comments confirmed that before the intervention they had been attempting to learn from the tutorial questions instead of the IFRS. This incorrect approach to learning in FA III resulted in the students having an inadequate knowledge of IFRS principles.

"I also tried to learn through the tutorials, thinking you can see the way out and then when you always get stuck and what you find is you actually didn't get that principle."

"I used to study overheads and lecture slides and after that I would do my tutorials. But now days I'm studying through the standards and then write them out. I think I am better equipped to get something from the start. When I refer back to my notes that I made, Oh this was the principle I need! And then ja, from that I learnt that now I understand why they do and what they do."

Students discovered that they were able to learn the skill of developing their own set of integrated notes more easily when the skill was role-modelled with them. They were able to gain a better understanding of the principles of IFRS when using this skill, than with their previous approach (Pintrich, 1991; Zimmerman, 2002).

"Today was the best. I have been reading my standards but I had been struggling to make notes based on them. So doing it together made me see how easy it is to do it. I also realised when writing the test that the notes are really important in helping one answer the question, because you cannot answer a question unless you know how to go about it and the standard tells you exactly how to go about it. So today was really helpful and motivating." From an email received on 30 August 2013.

"What I find most useful in the tutorials is the way you guide us in terms of engaging with the IFRS; I now try to engage with it like I do my tax legislation. Also my summaries have improved; they're now based on the principles per the IFRS and not 'how it was done in the tutorial'.'

"...because the thing is when you guide us through the material it really helps."

Students also found the skill of rewriting the information in the standard into their own words helpful in grasping the concepts in the IFRS. This skill is part of the development self-control of a student's own learning and supports the use of a student-centred approach to learning (Leveson, 2004; Trigwell and Prosser, 1991; Zimmerman, 2002).

"... the whole thing that you make us do, like, put it in your own words, so actually I try to put things in my own words and can actually see when I make my summaries I can put down, the definitions and I actually understand what the standard is getting at in my own words."

"I guess maybe the issue is being taught how to read it because I've read the standard but then it hasn't really come across to me that, you should actually try and explain it to yourself. So this is what this has done for me, because I read it but you're still trying to cram what has been said, rather than actually understand it."

During tutorials emphasis was placed on understanding the basic concepts or principles before considering the exceptions, because students often focus on the exceptions instead of understanding the basics. Once the basic concepts and principles had been covered, we then considered any exceptions. We considered the reasons for the exceptions and compared them with the conceptual framework principles. I also highlighted issues where students would be required to exercise judgement and discussed considerations when making such decisions.

Finally students commented that these skills definitely need to be modelled with them, as simply talking about it previously, during lectures, had not been effective (Bandura, 2009; Smith, 2001).

"You definitely have to explain it in the future. ..... Because when [they say] read IFRS, that's not very descriptive. You don't actually pick up anything by reading it. To learn the skill post fact then take it and look at an example. That's what they do ... it's not easy for someone to pick it up if they write third year for the first time. Lecturers tell us we need to engage with the IFRS, I remember you saying that post fact but you need to show what you mean by engage with the IFRS – not just read it."

"[With] learning, you have to be told how to learn sometimes because it's a different kind of [learning]. Like a lot of people find the jump from school to university is big. I think the reason why it's big, is because the learning and the skill of learning is different. There's a shift of the power of who must do the learning and in that shift you have to own it. And that shift isn't really easy to do in general because you know the style is different between how a teacher teaches and how a lecturer teaches. So if you are not sort of informed about the ways which to look at IFRS, it's not going to be that important."

Since I believe interacting with the IFRS to be a crucial skill that students need to develop, this is the area where the majority of the tutorial time was spent in the first cycle. From my own notes on the time spent teaching students to develop their own sets of notes and the students' comments, I have summarised the benefits of this exercise. The students learned

what it means to "interact" with their IFRS standards and experienced how to do so. The IFRS started to make more sense and students were beginning to see a "picture" of the whole topic instead of merely fragments. They began to consider the how and why of accounting for transactions instead of simply cramming the content. This supports the positive impact of a student-centred approach on student learning and the development of self-control and self-observation skills in students (Forehand, 2005; Leveson, 2004; Zimmerman, 2002). Students found it is actually easier to attempt the tutorials after making their own notes and this was not quite as time consuming as they had originally thought. Writing the concepts in their own words or explaining it to someone in their own words helped to increase their understanding. Discussing principles in a group scenario gave students another perspective, or way of doing things. The exercise of role-modelling all of these skills enabled students to begin developing self-control and self-observation skills specific to FA III (Zimmerman, 2002). Students also began to develop their own understanding of a topic and to be more aware of their own learning process (Biggs, 1999; Granville and Dison, 2005; Leveson, 2004).

Students also thought that it would have been useful to learn these skills at the beginning of the year. I agree that in the future these skills need to be taught at the beginning of each year and reinforced during the year.

4. Making a summary at the end of a section:

The final problem addressed was the need to make a summary at the end of each topic and how to do this effectively. The MSLQ strategies of organisation and elaboration were role-modelled to address this need (Pintrich, 1991). During tutorials as a starting point, I used mind maps or other forms of note-taking, which students had used to produce their integrated set of notes on a topic (Felder and Spurlin, 2005). We then discussed ways in which their own notes could be used to further summarise the topic. We also discussed that a summary should only be made when the whole topic had been addressed and should include points from the students' tutorial notes.

During one of the tutorial sessions on 30 August 2013 a student commented that using her notes and summaries from which to study for a test, had helped her to identify easily a few principles of which she had been unsure of. While making her own notes and summaries, she also learned to make a note of questions to discuss with a lecturer.

During tutorials I had a few of the students who had summarised a section, demonstrate what they had done. This was very useful to the students who had not yet made a summary and supports that peer learning can help a student to clarify information and develop a new approach to learning (Pintrich, 1991; Soloman and Felder, 2009) . They were able to grasp what we had been discussing and were able to see what they should be doing. I also discussed my own summary for a topic but did not give the students a copy as I was trying to teach them that they needed to do it for themselves in order to learn. Several students commented that making notes and summaries themselves helped them remember and understand the principles and concepts more easily. Using their summaries to study for the final exam saved time.

A comment by one of the students on making his/her own summaries:

"....With one chapter I've written down my notes and then when I go through my slides and then to the tutorials, then I can relate the principles to my summaries. After doing everything I can re-read my summaries and maybe get a shorter summary of maybe two pages and then it's easier to understand them."

In the first group feedback discussion, the students identified changes that they thought should be made for the remaining tutorial sessions. These changes were addressed during the second action research cycle. Students thought less time should be spent on theory because they were now able to develop their own notes. They also wanted to look at some practical questions which would test individual concepts, and to learn exam skills such as keeping calm, reading, analysing a scenario, planning and answering a question.

4.3.2 The second research cycle and group feedback session 2

1. Students inability to answer complex questions:

The MSLQ strategies of organisation, critical thinking and meta-cognitive self-regulation were role-modelled to address this problem (Bandura, 2009; Pintrich, 1991). I continued to work with the students to identify the economics of a transaction through simple examples. We discussed how a sound knowledge and understanding of the IFRS principles helped students to identify a principle within a complex scenario. I spent most of the time on this

problem, role-modelling specific cognitive strategies that students could use to analyse the scenario in a question. We also discussed how to use reading time effectively when analysing the question.

Students found that having made their own notes helped them to recognise the IFRS principle/s in a question. This is an example of reflective meta-cognition (Granville and Dison, 2005).

"Also making notes ensured that most of the concepts in the subject, I could easily identify them in a scenario when I was doing my tutorials."

The cognitive strategies to analyse the scenario helped the students in several ways. Drawing a picture or diagram while reading the question, helped students to relate and connect parts of the question and identify applicable IFRS standards. This skill also helped students to form a whole picture of the scenario and was a skill that some of them used for other third year courses e.g. taxation and auditing. These comments indicate that students have adopted the learning strategy that was modelled and are attempting to transfer this skill to learning in other contexts. The transfer of skills is what SRL is all about and enables students to become lifelong learners and continue to use effective learning strategies (Pintrich, 1995; Zimmerman, 2002). Students found that writing their thoughts down while analysing the scenario helped them to remember the points when answering the question. This skill was especially helpful in a stressful exam environment. Students also found the picture helped them link the scenario to what was required and to decide which part of the question to answer first (Soloman and Felder, 2009). Some of the students' comments were as follows:

"This relates to what I learned in analysing the complex scenarios: Thinking about the economics of the transaction. Thinking about how it relates to the conceptual framework and the IAS1. Drawing the big picture."

"In actual fact I did do planning during my reading time for the leases question in the exam. It helped me in that by the time I got to the question. I was feeling a little tired, so I had written down things already during reading time that I would not have remembered when I actually answered the question."

2. Students perform poorly in discussion/theory questions:

The MSLQ strategies of organisation, critical thinking and meta-cognitive self-regulation were role-modelled to address this problem. Prior to this activity, I had role-modelled an approach for students to use when answering theory questions. The approach was based on the skills taught in point 1 above. Approximately half of the students participated in completing the written assignment to practice the skills of answering a theory question. These students all reported that this was very beneficial as it was a form of self-reflection (Zimmerman, 2002). They found the detailed written comments on their answers helped them identify exactly where they were making mistakes and helped improve their writing skills. This task also boosted their confidence in their ability to answer theory questions. Besides impacting on learning strategies, this exercise also impacted on students' motivations, which supports SRL being a cyclical process. Through working on a specific SRL phase the other phases are impacted simultaneously (Zimmerman, 2002). Students did not leave theory questions to the end of the exam, as they had now developed an effective approach to answering theory questions. This was another skill that students were able to use in their other third year subjects, demonstrating that they were able to transfer the skill to other learning areas. Three of the students' comments were as follows:

"The enrichment tutorials really helped me in improving in answering theory questions, as l always felt that theory questions where subjective to the examiner and the final answer was more important. What l realised from the Enrichment tutorial is that when answering theory questions you do not write what you have studied in the IFRS (which I used to do before which I believe it's what is called theory dumping) but you use what you have studied to pick up concepts in the scenario that you will use in answering the theory question (what's in the scenario is what you need to write rather than what you studied). Also the feedback that you gave us on theory question helped me in becoming more confident and comfortable when answering theory questions, which was not the case before the enrichment. As I always did not do well in them, hence had an attitude towards them. Planning before answering a theory question l also think it helped not only in Financial Accounting but in other subjects."

"Then I got my required and started to write and the first thing was the theory question and I was like now what? I almost thought no, I'll leave it to the end. I'll get time to think about it. Then I read it and I was, like actually, I'm quite comfortable with answering this and I can do

it. I quickly drew up a little mind map of points with everything that I wanted to go through and it actually helped so much. As I was writing I had started to forget things but because I was ticking them off as I was going on I had covered each point. I remember now and I could just put it in and I found that really helpful. I think that my theory question's on Wednesday are definitely going to carry me, compared to my other marks and I found that really very helpful because I knew how to shuffle and how to lay it out and thoughts that I'd had were there and I didn't forget to mention them."

"This year has taught me that theory is my Achilles heel! The numbers are fine, but when it comes to discussion questions I find it difficult to order my thoughts in the way the examiner wants me to. It's almost like I'm given a blank canvas and I'm asked to draw something. I feel that theory at times is too subjective so I began to practice and actually write out when answering a theory question as understanding and knowing the content alone is clearly not sufficient."

3. Exam technique and time management:

The MSLQ strategies of organisation, critical thinking, meta-cognitive self-regulation and time and study environment were role-modelled to address this problem (Bandura, 2009; Pintrich, 1991). I role-modelled exam technique skills that students should use in addition to the skills and strategies taught in problems 1 and 2 above. Students thought that these skills need to be emphasised regularly and role-modelled with them. Some of these skills were integrating workings into the solution as a student completes them, and how to handle transactions or items a student does not understand or is unsure of during an exam. We also worked on time management during the reading and answering time in an exam. All of these skills relate to the development of self-control skills and self observation skills (Zimmerman, 2002). This is a general comment that a student made about exam technique:

"This relates to what I learned about test approach:

- *Making pictures during the reading time.*
- *Understanding the question first, before answering it.*
- *Theory - it helps to state the obvious.*
- *Not having to spend too much time on a question.*
- *Have the aim to pass each question - I used to aim to get each question 100% correct and left other questions due to the time pressure."*

Students found that integrating workings saved time and therefore they completed more questions during the exam. They also realised that this was a skill they needed to practice before an exam to develop it properly as the following student states:

"The integration of workings with the solution is indeed the best strategy to minimize the time spent on the question. But for me being a very procedural thinker, especially when I'm under pressure, I found it difficult to do so. For me to integrate workings and the solution I realized that practice and not only understanding was important. So for those topics which eventually became mechanical I could integrate the workings but for the ones I was slightly uncomfortable with, I did the workings fully then populated the solution."

"I did a skeleton of the solution first, so that I could know why I was doing my workings and immediately transfer them. Before I used to get confused as to why I'm doing the workings halfway through."

The other skill that several students found useful during exams was in dealing with items which they were unsure of. These students used the skill of making a decision and then moving on, instead of wasting time when they were stuck. Students commented as follows:

"For the parts of the questions that I didn't know what to do, I made an assumption and moved on as there is no time to think and figure out things and my objective was to pass the question."

"The other thing that I found really beneficial, to re-iterate what other people said, is to make a decision. I thought that yesterday there were a couple of things that I was very unsure of and to make a decision and to go with it."

To address the issue of examination stress, we discussed how students could handle anxiety and stress during an examination. One of the suggestions was for students to stop, take a deep breath and look up, to give them an opportunity to calm down. Two students used this approach during the final exam and made the following comments:

"I let myself stress a bit and then took a deep breath (literally) and just broke down a question and tried to see what parts I could do or where I could possibly get marks. If I still found it difficult I moved on and dealt with it later."

"Looking up and taking a deep breath when I was panicking after reading question two really helped me."

However, during the feedback I learned that even when students may have begun to develop SRL skills, some of them still struggle to cope with exam stress, as can be seen from the following comment:

Exam stress remained a major hindrance even thinking about the course makes my heart palpitate. I think my problem with financial accounting has become more psychological than regarding my own understanding. I am actually planning to go to the Counseling and Career Development Unit (CCDU) for this, in order to learn how to manage my anxiety better.

This comment reflects increased self-awareness of test anxiety and a possible way to deal with it appropriately (Pintrich, 1995; Zimmerman, 2002). However, as indicated in the statistical analysis, there was no significant difference in the test anxiety sub-scale. The comments above reinforce this finding and point to the need for further work to help students manage test anxiety.

Students were also asked a few other questions about the intervention during the second feedback session (refer to appendix 7) that shed light on their experience of the intervention. One of the questions was what the students had learned about themselves and their approach to studying FA III. Some of the comments were as follows:

"An important thing I learnt from the enrichment tutorials is engaging with my IFRS. I had never realised this but our lecture notes are exactly like the IFRS and its better to understand it straight from there than from the notes. And I realised the importance of pre-reading; I was confused every single lecture last year but this year because I had seen the work before, I understood better during the lectures."

"What I learned about myself was that I am able to do it, but I need to resolve my anxiety issues first. With my studying approach, I learned how important the standard is."

"The most important thing that I took out from the Enrichment that I feel helped me in understanding Financial Accounting much better, is to make my own personal notes when studying the subject and to engage more with my standard before even attempting the tutorials. l never used to do this before the Enrichment as I always felt there was not enough

time but this helped me save time when I was preparing for the exams, as did not need to go through the whole set of notes given in the course and this normally would be a stressful exercise as there is little time to prepare for our exams and tests for all four subjects."

"I learnt that the tutorials are there to supplement learning and are not the source. So I made sure I went over the content and the standard before attempting the tutorials. I feel that the tutorials cement the knowledge I should already have and give me the how-to which is not always clear after reading the standard."

Through the process of modelling what students should be doing, they realised it was up to them to take on ownership of their own learning as evidenced by a comment made during one of the tutorial sessions by a student. She used to rely on her lecturers and tutors to provide the information she needed. She has now realised she needs to do the work herself by working with the standard, trying to give it a context and relating it to the real world. In the final feedback in discussing what she had learned to do differently this student made the following comment:

"Basically; I started to focus on the basic principles and understanding the big picture of each standard and how it relates to the real world. Not hesitating to go through the process of: pre-read, lecture, post-read and summary. I used to think doing this wastes time, doing the tutorials only would help .... Being able to own the knowledge and not being dependent on my lecturers and tutors."

Even though no statistically significant differences were found in the MSLQ sub-scale of peer learning some students found interacting with peers useful. Most students found that working with others helped them to see a different approach and get a different perspective. Some students found other students and their experiences helpful and inspiring. Some of their comments were as follows:

"That was very helpful for me because there's one question I think he raised it at [the tutorial]. I didn't get that in the question. I didn't pick it up but then after he explained it, I mean I definitely began to understand what was going on."

"Working with others was more stimulating because you get different perspectives from everyone. This made the content more alive as people debated ideas and interpretations.

Moreover getting advice from other students and especially repeaters was extremely helpful and inspiring at the same time."

Other students experienced difficulty in implementing peer learning and help seeking skills, as evidenced by the following comments:

"I am quite a shy person, so that was a challenge, but familiar faces made it a little bit easier. Working in a group is obviously better than working alone, especially when you don't understand something. Outside the group, I did not consult with fellow students, because I found it difficult to approach them."

I used everything that I learnt but I'm still having trouble with getting help from other people, not because I don't find it helpful, it's just difficult for me to do.

Students made a few suggestions with regard to what they would like lecturers/tutors to do when they teach. It is more useful to role-model at least one unseen question during tutorials rather than discussing all the prepared questions in detail. Tutors should make sure that everyone participates during the tutorial and encourage all students to share their knowledge, problems and views in the discussion. Students found short tests during the tutorials, to test concepts, more helpful than doing online pre-reading tests, as they thought pre-reading tests did not motivate nor help them to engage with IFRS. The tutor/lecturer should show their passion for the subject when role-modelling skills, as this is infectious, sparks interest and inspires the students.

Overall students found the enrichment tutorials beneficial. They were able to use many of the skills role-modelled to improve their own learning approaches to FA III. The feedback received also supports the findings of the analysis of the MSLQ questionnaire.

An unexpected result of this research had a personal outcome for me upon reflecting on the students' and my own learning experience. While writing this report I realised that like the FA III students, I was learning to develop my own SRL skills in parallel with them. I also experienced the SRL cycle through a process of reflection, monitoring and evaluation (Zimmerman, 2002). I discovered that academic writing was more difficult than I anticipated and that I needed to learn and develop the use of new skills to conduct and report on this research project. Learning really is a lifelong journey. This process also enabled me to

experience some of the feelings and challenges associated with learning, similar to those which the students face, something I have not experienced for many years. As a lecturer this journey has been a rewarding and enriching experience both professionally and personally.

Chapter 5 - Conclusions and recommendations

This research explored the impact of explicitly role-modelling SRL skills on the motivation and learning strategies of a group of FA III students. Specific cognitive SRL skills were role-modelled with the students during an intervention I undertook as a lecturer over a period of three months. Active learning activities were used to role-model the SRL skills and strategies.

The intervention focussed on role-modelling specific learning strategies in terms of the MSLQ sub-scales of: rehearsal, elaboration, organisation, critical thinking, meta-cognitive self-regulation, time/study environment management, peer learning, help seeking and test anxiety. A comparison of these sub-scales, measured before and after the intervention revealed significant differences in six of the nine sub-scales role-modelled. The sub-scales of peer learning, help seeking and test anxiety did not show any significant statistical differences. Student feedback on these sub-scales identified that some students struggled to implement these skills. Thus, further research will need to be carried out to determine effective ways to teach students how to develop these skills. An increase in the other sub-scales after the intervention indicates the positive impact that the intervention had. These results demonstrate that FA III students can learn cognitive skills through role-modelling.

The qualitative data in the form of feedback from the participants in the intervention corroborates the MSLQ results. The student feedback provided a much deeper understanding of the impact of the intervention on the students' SRL skills. Role-modelling with active learning activities allowed students to experience using the skills. This experience convinced the students of the value of learning and using these skills to improve their approach to learning FA III. Additionally, students gained confidence in their own ability to perform the skills. This intervention resulted in many of the participants adopting more effective learning approaches. Some students also started to use the skills learned in their other third year subjects.

The intervention further demonstrated that students need to be taught the discipline-specific language of financial accounting in order to understand the content of the course and develop their communication skills. Role-modelling of activities with students is an effective way to do this. Lecturers need to specifically teach them how to develop reading, writing and oral communication skills. An essential element of this process includes providing timeous, detailed feedback to each student.

On reflecting about my experience as a lecturer role-modelling specific cognitive learning strategies and skills with this group of students, I came to the following important conclusions. There is a need for lecturers to adopt a student-centred approach that focuses directly on the students' specific difficulties with learning financial accounting and students need to be taught how to take responsibility for their own learning.

Areas for future research

Further research needs to be carried out, to determine the most effective methods of transmitting SRL concepts and strategies to the entire student body. This will result in students becoming lifelong learners and attaining both academic and professional success. Lecturers need to develop methods of teaching subject specific SRL skills and incorporate these into their courses. A further challenge is to enlist the co-operation and commitment of other lecturers to adopt such a teaching approach. As shown in this research an important aspect of their role as educators is to demonstrate and explain each step in their thought process when applying principles and solving problems. Such an approach would assist students in developing the necessary reasoning skills for their future as professionals in practice.

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Appendix A1: Ethics clearance certificate

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Merino

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER H13/08/08**
PROJECT TITLE	Self-regulated tutorial system implementation
INVESTIGATOR(S)	A Merino M Aucock L Wilmot B Breytenbach
SCHOOL/DEPARTMENT	School of Accountancy
DATE CONSIDERED	16/08/2013
DECISION OF THE COMMITTEE	Approved Unconditionally
EXPIRY DATE	11/09/2015

DATE 12/09/2013 **CHAIRPERSON** (Professor T Milani)

cc: Supervisor : N/A

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10003, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

_____ _____/_____/_____

Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix A2: Research participant information, Research consent form

Research Participant Information

You are being asked to participate in a research project. Researchers are required to provide a consent form to inform you about the study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. The researcher in charge of the project is Mrs Lanelle Wilmot, Senior Tutor at the School of Accountancy, University of the Witwatersrand. You should feel free to ask Lanelle Wilmot any questions you may have on lanelle.wilmot@wits.ac.za.; room FNB 129; 011 7178243.

Study Title:

Self-Regulated Cognitive Learning Skills in Financial Accounting III.

Purpose of the research:

You are being asked to participate in a research study on student learning. The project is to investigate whether the role-modelling of cognitive (thinking about academic content, in this case, Financial Accounting) and meta-cognitive (thinking about your own approach to thinking and developing your own approach) Self-Regulated Learning (SRL) skills to Financial Accounting III students, by a lecturer, can help students to learn specific SRL skills and consequently to improve their academic performance.

This study is being conducted as the research component of a Masters in Commerce (Accounting) degree through the University of the Witwatersrand.

From this study the researcher hopes to learn:

- What level of awareness, of SRL skills, is there among Financial Accounting III students? What motivates Financial Accounting III students to learn and what strategies for learning do they apply to the course?
- To what extent can a lecturer model specific cognitive and meta-cognitive SRL skills to students in an active learning environment so that students can develop the ability to use them on their own?

Focus group:

The project will involve attending:

- 10, learning enrichment sessions for 1 ½ hours, on a Monday afternoon from 13:00 – 14:30 on the following dates: 22 July; 29 July; 5 August; 12 August; 19 August; 2 September (This is during the study break and so will discuss with the group whether or not you would like to have a session); 9 September; 16 September; 23 September; 7 October; 14 October.
- 1 debriefing session at the end of the semester.

The enrichment sessions and debriefing will be documented by audio recording and transcribed.

Potential benefits:

The potential benefits that you may gain from participating actively in this study are: you should be able to learn about yourself and your own approach to learning, perform better in tests and exams, as well as learn new skills to become a life-long learner. You will also be able to use the skills that I will be role-modelling in Financial Accounting IV and you will be able to use the output from these sessions in revising IFRS, addressed in FA III, in FA IV.

Privacy and confidentiality:

As the sessions will be conducted in a group setting it is not possible to guarantee confidentiality. However, data will be coded and will not be reported with details that could identify you as individuals.

Any concerns or discussions held outside of the sessions will be treated as private conversations and will not form part of the data used in the research.

Data will be stored in the researcher's private office and will be protected by electronic password and any hard copies will be securely locked. The raw data in the form of audio files and unedited transcripts will be held until any final changes to the research report have been made and the paper has been accepted. They will then be destroyed.

Data will only be accessible to the researcher, participants (as part of the validation process), the research supervisors and the examiner of the research report. However, the identities of all research participants will remain anonymous and only the researcher will have access to the original data.

Research Consent Form:

I have been offered the possibility of participating in a research project titled **Self-Regulated Cognitive Learning Skills in Financial Accounting III.**

My participation in this project is voluntary.

For me the project will involve attending 10 enrichment tutorial sessions and one debriefing session. The enrichment sessions will introduce me to the principles of self-regulated learning and specific SRL skills.

In order to assess the degree of self-regulated learning currently displayed by me, I will complete the Motivated Strategies for Learning Questionnaire (MSLQ) during the first session and again at the end of the semester. This will allow the researcher to determine whether as a result of the intervention the motivational and learning strategies employed by me change.

I will also complete two other questionnaires. The Index of Learning Styles Questionnaires and Levine's Study Behaviours Questionnaire. Data collected from these questionnaires will be used to determine whether the variables measured can be used to predict academic performance.

Some of the enrichment sessions for the tutorials and the debriefing session are going to be audio-recorded. As the sessions will be conducted in a group setting it is not possible to guarantee confidentiality. However, I have been told that my identity will remain anonymous in any publication or report that is prepared summarising the intervention. This study is being conducted as the research component of a Masters in Commerce degree and the research will be presented in academic conferences and also published in peer reviewed articles.

I agree to allow audio-recording of the enrichment and the debriefing sessions.
Yes No Initials_____
The research project has been explained to me, I understand its scope and I agree to participate in it.
Name & Surname:

Signature: Date:

Your rights to participate, say no, or withdraw:
Participation in this research project is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. In the event that you are no longer willing or able to participate in the research, please let the researcher know immediately. Please return the signed form to Lanelle Wilmot, Room FNB 129.

Appendix A3: MSLQ

The Motivated Strategies for Learning Questionnaire

Reference code:

Please reflect on your experiences with **Financial Accounting III** when answering the following questions. Remember there are no right or wrong answers, so you should just try to answer as honestly as possible. Please circle the answer that most applies to you.

Answers range from 1 to 7:

1	2	3	4	5	6	7
Not at all true of me						***Very true of me***

Part 1: Motivation		**1 = not at all true of me** **7 = very true of me**
1	In a course like this, I prefer course material that really challenges me so I can learn new things.	1 2 3 4 5 6 7
2	If I study in appropriate ways, then I will be able to learn the material in this course.	1 2 3 4 5 6 7
3	When I take a test I think about how poorly I am doing compared with other students.	1 2 3 4 5 6 7
4	I think I will be able to use what I learn in this course in others courses.	1 2 3 4 5 6 7
5	I believe I will receive an excellent mark in this course.	1 2 3 4 5 6 7
6	I'm certain I can understand the most difficult material presented in the readings for this course.	1 2 3 4 5 6 7
7	Getting a good mark in this course is the most satisfying thing for me right now.	1 2 3 4 5 6 7
8	When I take a test I think about items on other parts of the test I can't answer.	1 2 3 4 5 6 7
9	It is my own fault if I don't learn the material in this course.	1 2 3 4 5 6 7
10	It is important for me to learn the course material in this course.	1 2 3 4 5 6 7
11	The most important thing for me right now is improving my overall mark average, so my main concern in this course is getting a good mark.	1 2 3 4 5 6 7
12	I'm confident I can learn the basic concepts taught in this course.	1 2 3 4 5 6 7
13	If I can, I want to get better marks in this course than most of the other students.	1 2 3 4 5 6 7
14	When I take tests I think of the consequences of failing.	1 2 3 4 5 6 7
15	I'm confident I can understand the most complex material presented by the lecturer in this course.	1 2 3 4 5 6 7
16	In a course like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.	1 2 3 4 5 6 7
17	I am very interested in the content area of this course.	1 2 3 4 5 6 7
18	If I try hard enough, then I will understand the course material.	1 2 3 4 5 6 7
19	I have an uneasy, upset feeling when I take an exam.	1 2 3 4 5 6 7
20	I'm confident I can do an excellent job on the assignments and tests in this course.	1 2 3 4 5 6 7
21	I expect to do well in this course.	1 2 3 4 5 6 7
22	The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.	1 2 3 4 5 6 7
23	I think the course material in this course is useful for me to learn.	1 2 3 4 5 6 7
24	When I have the opportunity in this course, I choose course assignments that I can learn from even if they don't guarantee a good mark.	1 2 3 4 5 6 7

25	If I don't understand the course material, it is because I didn't try hard enough.	1 2 3 4 5 6 7
26	I like the subject matter of this course.	1 2 3 4 5 6 7
27	Understanding the subject matter of this course is very important to me.	1 2 3 4 5 6 7
28	I feel my heart beating fast when I take an exam.	1 2 3 4 5 6 7
29	I'm certain I can master the skills being taught in this course.	1 2 3 4 5 6 7
30	I want to do well in this course because it is important to show my ability to my family, friends, employer, or others.	1 2 3 4 5 6 7
31	Considering the difficulty of this course, the lecturer, and my skills, I think I will do well in this course.	1 2 3 4 5 6 7
Part B: learning Strategies		**1 = Not at all true of me** **7 = very true of me**
32	When I study the readings for this course, I outline the material to help me organise my thoughts.	1 2 3 4 5 6 7
33	During lecture time I often miss important points because I'm thinking of other things.	1 2 3 4 5 6 7
34	When studying for this course, I often try to explain the material to a classmate or friend.	1 2 3 4 5 6 7
35	I usually study in a place where I can concentrate on my course work.	1 2 3 4 5 6 7
36	When reading for this course, I make up questions to help focus my reading.	1 2 3 4 5 6 7
37	I often feel so lazy or bored when I study for this course that I quit before I finish what I planned to do.	1 2 3 4 5 6 7
38	I often find myself questioning things I hear or read in this course to decide if I find them convincing.	1 2 3 4 5 6 7
39	When I study for this course, I practice saying the material to myself over and over.	1 2 3 4 5 6 7
40	Even if I have trouble learning the material in this course, I try to do the work on my own, without help from anyone.	1 2 3 4 5 6 7
41	When I become confused about something I'm reading for this course, I go back and try to figure it out.	1 2 3 4 5 6 7
42	When I study for this course, I go through the readings and my course notes and try to find the most important ideas.	1 2 3 4 5 6 7
43	I make good use of my study time for this course.	1 2 3 4 5 6 7
44	If course readings are difficult to understand, I change the way I read the material.	1 2 3 4 5 6 7
45	I try to work with other students from this course to complete the course assignments.	1 2 3 4 5 6 7
46	When studying for this course, I read my course notes and the course readings over and over again.	1 2 3 4 5 6 7
47	When a theory, interpretation, or conclusion is presented in a lecture or in the readings, I try to decide if there is good supporting evidence.	1 2 3 4 5 6 7
48	I work hard to do well in this course even if I don't like what we are doing.	1 2 3 4 5 6 7
49	I make simple charts, diagrams, or tables to help me organise course material.	1 2 3 4 5 6 7
50	When studying for this course, I often set aside time to discuss course material with a group of students from the class.	1 2 3 4 5 6 7
51	I treat the course material as a starting point and try to develop my own ideas about it.	1 2 3 4 5 6 7
52	I find it hard to stick to a study schedule.	1 2 3 4 5 6 7
53	When I study for this course, I pull together information from different sources, such as lectures, readings, and discussions.	1 2 3 4 5 6 7
54	Before I study new course material thoroughly, I often skim it to see how it is organised.	1 2 3 4 5 6 7
55	I ask myself questions to make sure I understand the material I have been studying in this course.	1 2 3 4 5 6 7
56	I try to change the way I study in order to fit the course requirements and the lecturer's teaching style.	1 2 3 4 5 6 7
57	I often find that I have been reading for this course but don't know what it was all about.	1 2 3 4 5 6 7
58	I ask the lecturer to clarify concepts I don't understand well.	1 2 3 4 5 6 7

59	I memorise key words to remind me of important concepts in this course.	1 2 3 4 5 6 7
60	When course work is difficult, I either give up or only study the easy parts.	1 2 3 4 5 6 7
61	I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.	1 2 3 4 5 6 7
62	I try to relate ideas in this subject to those in other courses whenever possible.	1 2 3 4 5 6 7
63	When I study for this course, I go over my course notes and make an outline of important concepts.	1 2 3 4 5 6 7
64	When reading for this course, I try to relate the material to what I already know.	1 2 3 4 5 6 7
65	I have a regular place set aside for studying.	1 2 3 4 5 6 7
66	I try to play around with ideas of my own related to what I am learning in this course.	1 2 3 4 5 6 7
67	When I study for this course, I write brief summaries of the main ideas from the readings and my course notes.	1 2 3 4 5 6 7
68	When I can't understand the material in this course, I ask another student in this course for help.	1 2 3 4 5 6 7
69	I try to understand the material in this course by making connections between the readings and the concepts from the lectures.	1 2 3 4 5 6 7
70	I make sure that I keep up with the weekly readings and assignments for this course.	1 2 3 4 5 6 7
71	Whenever I read or hear an assertion or conclusion in this course, I think about possible alternatives.	1 2 3 4 5 6 7
72	I make lists of important items for this course and memorise the lists.	1 2 3 4 5 6 7
73	I attend this course regularly.	1 2 3 4 5 6 7
74	Even when the course materials are dull and uninteresting, I manage to keep working until I finish.	1 2 3 4 5 6 7
75	I try to identify students in this course whom I can ask for help if necessary.	1 2 3 4 5 6 7
76	When studying for this course, I try to determine which concepts I don't understand well.	1 2 3 4 5 6 7
77	I often find that I don't spend very much time on this course because of other activities.	1 2 3 4 5 6 7
78	When I study for this course, I set goals for myself in order to direct my activities in each study period.	1 2 3 4 5 6 7
79	If I get confused taking notes in course, I make sure I sort it out afterwards.	1 2 3 4 5 6 7
80	I rarely find time to review my notes or readings before an exam.	1 2 3 4 5 6 7
81	I try to apply ideas from course readings in other course activities such as lectures and discussions.	1 2 3 4 5 6 7

Thank you very much for your cooperation

Appendix A4: Levine's Study Behaviours Questionnaire

TRIADS PERSONALITY INDICATOR FOR STUDENTS
©*'99* Janet Levine: Transforming Teaching Workshops
In association with David Rehorick, Ph.D., Professor of Sociology, University of New Brunswick, and Consulting Faculty, The Fielding Institute

Let's begin with nine simple questions. There are no right or wrong responses to this well-tried methodology for identifying the foundation of your personality, your dominant motivational mode. Once you understand what motivates you, you'll be prepared to discover whether you are a Helper, Organizer, Dreamer, Observer, Questioner, Entertainer, Protector, Peacekeeper, or Moralizer. Following each question are three statements. Choose one that fits you the most closely. Unless you print this material, make a note of your response on a piece of paper, for example, 1a, 2b, etc, as you will not be able to do so online.

1.) You are working with other students on a project. Observing the impact on the project of how other students interact and behave, gets you thinking about the way you work with others. You assess your behavior in work groups as:

a.My behavior in groups has to do with interaction and energy, with connecting to people. I ask myself, am I getting through on an emotional level? Do the others understand where I'm coming from? How am I coming across, how do others see me? It's important that we connect in a meaningful way.

b. My behavior in groups is instinctive, I have a "gut" feel about what is right and wrong, fair and unfair. I don't like being taken for granted—whether by institutional rules, expectations of others, demands that are extraneous to the job I'm doing. I don't always like conflict, but I have a great need to say what I have to say, to be heeded.

c. My behavior in groups is intellectual, no question. I live in my head—conceptualizing, fantasizing, thinking things through are important to me. *Rationality* is a big word with me. I'm interested in how people think, process information, work with ideas.

2.) How do you assess the way you communicate your input when working in groups?

a. What you see is what you get. I don't use guile, or fancy gimmicks. I present the way I understand it; I give it my best shot. People get my honest sense of how it is.

b. Presentation, connection, and performance are important to me—the medium is the message, that kind of thing. So I try to put on a show, highlight my ideas; find the nuances of expression that will enhance the basics. I use emotion and show time, anything that will help people better understand what I'm saying.

c. I try to keep things as conceptual, uncluttered and intellectually pure as I can. I love to ask questions, to practice skepticism, to be a discerning thinker. I try to probe below the surface: if we can stick with what's rational and logical, we're on solid ground.

3.) How do you learn?

a. I learn through the mental activity of finding answers, of the excitement that comes from seeing my mind open to the possibilities, to big-picture connections, to new conclusions. Mental energy in the classroom stimulates my own thinking.

b. I value people, so I learn through the possibilities of all sorts of human contact and connection: the emotional highs and lows, the feeling of achievement when we all "click" and experience some profound interconnection in the moment. The classroom is like the theater when the audience and the actors (students and teachers) become one—unity built on empathy, human understanding, little else. I like personal connection with a teacher.

c. I learn by trusting my instinct—when something falls into place for me I feel it in my body—*this is it!* I need to get a sense of things, of how they sit with me, of where I stand in relationship to them. The world is difficult to understand, you can lose your way all too easily. Learning for me is getting some skills, some tools, and some road maps to take on my journey.

4.) Although you get along with most of your teachers, every so often one comes along with whom you clash, whom you think doesn't like you. Why do you think they don't appreciate you?

a. I come on too emotionally when I'm in class, when I'm talking. They often feel like I'm trying to manipulate them, and the others into interacting with me. Why can't I just say things out straight? I try to shine it on. I need to be the center of attention; it's almost like I need their approval.

b. I'm too abstract, too theoretical, too detached. They need more interaction from me. They're talking, I'm listening, but they have this sense that I'm not really there, that I've moved to somewhere in my head. The harder they try to know where they are with me, the more I distance myself. They question if anything gets through to me on a personal level.

c. I have a sense of boundaries around myself. I can come across as an immovable force, solid, implacable, although I'm not usually aware of this. I know I can dig in and nothing people say or do will shift me. I've been accused of being overly defensive, stubborn, critical. I'm not usually aware of my impact on people.

5.) Some of your friends are in serious trouble because of a grave misdemeanor. They break the news to you. How do you try to help in this difficult moment?

a. I try to help by being rational, and not getting caught up in emotions. I can support them best by being logical, by trying to explain the inevitability of the disciplinary decision based on school rules. We can have reasonable discussions, and they can see all the reasons for this outcome. They know what I feel for them personally, this has nothing to do with that.

b. I try to help by being straightforward and down-to-earth. We've known one another long enough, we know where we stand. This does not affect my relationship with them, it isn't a big deal. So what? School rules are school rules. Face-to-face, saying it straight without any extraneous talk, that's always the best way to handle these interactions.

c. When my friends are in trouble, it strikes at my heart. I'm more anxious about this than I want to admit—emotional upsets really get to me. We know one another well, have a good understanding, a good connection. I know what they're feeling, as if it were myself. How best to support them? Although they are in the wrong—and we all know that—I try to get through to them how much I care.

6.) You sign up for a course you want to take above all others. When you see the list your name is not there. How do you react?

a. Disbelief, I can't accept this at all. I knew the numbers were tight, but why me? I've wanted this course for years. I feel like my heart has been wrenched out of me, I'm so disappointed. I can't get beyond my feelings. I'll never get over this one.

b. I guess I should have seen this coming. They cut people last year too. All the signs were there, I just didn't think they were pointing in my direction. If you think about it rationally and logically, it's a perfectly legitimate studies office decision—too many students. I allowed myself to be blind-sided by my own expectations. I'll learn other good things in another course. Maybe this course wasn't for me anyway. I won't take this personally.

c. I'm uncomfortable, and angry about this. There's no place to feel you belong in this world. I did everything anyone could ask of me to get into this course. You get slammed one way or the other. The anger is overwhelming; I feel it in my whole body. This just reinforces my sense that life is unfair, life is hard. My mistake was to leave myself open to be kicked around.

7.) You want to be a great student—contribute to the school in all areas—your dream reflects the deepest parts of yourself. Your passion stems from:

a. A feeling that I've got something to share that people can relate too, I believe I've got what it takes to put across my vision in a way that's honest, good, and effective. It's all about people. I can get through to people, I'm in tune, I understand people. In my heart I know this is true.

b. A hunch, an instinct that I'm in the right place at the right time doing what I'm supposed to be doing—when my head, heart, and belly are aligned behind something, I can trust that sense. I can put my full force behind it. I would never commit myself if I didn't feel 100 percent about it.

c. The knowledge that I have thought through first rate ideas that will be of benefit and break new ground in terms of concepts. I wouldn't be involved in anything if I wasn't convinced of

the validity of my ideas. If I weren't one hundred percent sure of my thinking I wouldn't be putting myself on the line.

8.) The senior personnel of a student governing body on campus are interviewing you for a position. You feel confident you can handle the job because:

a. Of my proven record as an ideas person. No one can question that what I do is conceptually thought through and mentally sound. My prior experience attests to my theoretical ability and know-how. I'm as intellectually solid a student leader as any on the market.

b. Of my track record of getting through to people. Whether it's in the classroom, the sports team, the choral society committee, running assemblies, I've always been able to put across what I believe in a way that people feel they want to be part of it. I know people, people are my life. I can get the world on board.

c. Of the fact I just know this is the right job for me, I can fit right in here. I have reliable instincts. I've proven it to myself and others time and again. Lots of people have made good from my instincts. Only something that I believe in 100 percent would get me into this chair to ask for a job. My peers know where they stand with me, which makes them feel safe.

9) Your peers nominate you for an Outstanding Student award. What is your response?

a. The award is objective validation that the way I think through what I do, my intellectual energy, and the highly mental approach I bring to all my activities are verifiable, something others can measure. I'm pleased.

b. Public recognition for my efforts is gratifying, but it's not about me, I'm not what I do. This award won't change things one way or the other, make me a better person, or bring meaning to my life. I'll just go on contributing the way I always have.

c. I know I'm a good person, so I deserve this, but many of my peers are good people, too. What is important about this, is that they nominated me. That means the world to me. Enough people know me, value me, are connected to me and want to acknowledge me this way. That really gets to me.

SCORE: **The following majority of choices indicate your modality.** You may find you have several choices in different areas. There are sound reasons for this. For example, many students are secure in their student life and the inventory can reflect this. *Nonetheless your primary triad is the one that shows the most choices.* Please tally your score.

Attacher: 1a, 2b, 3b, 4a, 5c, 6a, 7a, 8b, 9c

Detacher: 1c, 2c, 3a, 4b, 5a, 6b, 7c, 8a, 9a

Defender: 1b, 2a, 3c, 4c, 5b, 6c, 7b, 8c, 9b

Appendix A5: Index of Learning Styles

INDEX OF LEARNING STYLES

DIRECTIONS
Please choose only one answer for each question. If both "a" and "b" seem to apply to you, choose the one that applies more frequently.

1. I understand something better after I
- **a)** try it out.
- **b)** think it through.

2. I would rather be considered
- **a)** realistic.
- **b)** innovative.

3. When I think about what I did yesterday, I am most likely to get
- **a)** a picture.
- **b)** words.

4. I tend to
- **a)** understand details of a subject but may be fuzzy about its overall structure.
- **b)** understand the overall structure but may be fuzzy about details.

5. When I am learning something new, it helps me to
- **a)** talk about it.
- **b)** think about it.

6. If I were a teacher, I would rather teach a course
- **a)** that deals with facts and real life situations.
- **b)** that deals with ideas and theories.

7. I prefer to get new information in
- **a)** pictures, diagrams, graphs, or maps.
- **b)** written directions or verbal information.

8. Once I understand
- **a)** all the parts, I understand the whole thing.
- **b)** the whole thing, I see how the parts fit.

9. In a study group working on difficult material, I am more likely to
- **a)** jump in and contribute ideas.
- **b)** sit back and listen.

10. I find it easier
- **a)** to learn facts.
- **b)** to learn concepts.

11. In a book with lots of pictures and charts, I am likely to

a) look over the pictures and charts carefully.

b) focus on the written text.

12. When I solve math problems

a) I usually work my way to the solutions one step at a time.

b) I often just see the solutions but then have to struggle to figure out the steps to get to them.

13. In classes I have taken

a) I have usually gotten to know many of the students.

b) I have rarely gotten to know many of the students.

14. In reading nonfiction, I prefer

a) something that teaches me new facts or tells me how to do something.

b) something that gives me new ideas to think about.

15. I like teachers

a) who put a lot of diagrams on the board.

b) who spend a lot of time explaining.

16. When I'm analyzing a story or a novel

a) I think of the incidents and try to put them together to figure out the themes.

b) I just know what the themes are when I finish reading and then I have to go back and find the incidents that demonstrate them.

17. When I start a homework problem, I am more likely to

a) start working on the solution immediately.

b) try to fully understand the problem first.

18. I prefer the idea of

a) certainty.

b) theory.

19. I remember best

a) what I see.

b) what I hear.

20. It is more important to me that an instructor

a) lay out the material in clear sequential steps.

b) give me an overall picture and relate the material to other subjects.

21. I prefer to study

a) in a study group.

b) alone.

22. I am more likely to be considered

a) careful about the details of my work.

b) creative about how to do my work.

23. When I get directions to a new place, I prefer

a) a map.

b) written instructions.

24. I learn

a) at a fairly regular pace. If I study hard, I'll "get it."

b) in fits and starts. I'll be totally confused and then suddenly it all "clicks."

25. I would rather first

a) try things out.

b) think about how I'm going to do it.

26. When I am reading for enjoyment, I like writers to

a) clearly say what they mean.

b) say things in creative, interesting ways.

27. When I see a diagram or sketch in class, I am most likely to remember

a) the picture.

b) what the instructor said about it.

28. When considering a body of information, I am more likely to

a) focus on details and miss the big picture.

b) try to understand the big picture before getting into the details.

29. I more easily remember

a) something I have done.

b) something I have thought a lot about.

30. When I have to perform a task, I prefer to

a) master one way of doing it.

b) come up with new ways of doing it.

31. When someone is showing me data, I prefer

a) charts or graphs.

b) text summarizing the results.

32. When writing a paper, I am more likely to

a) work on (think about or write) the beginning of the paper and progress forward.

b) work on (think about or write) different parts of the paper and then order them.

33. When I have to work on a group project, I first want to

a) have "group brainstorming" where everyone contributes ideas.

b) brainstorm individually and then come together as a group to compare ideas.

34. I consider it higher praise to call someone

a) sensible.

b) imaginative.

35. When I meet people at a party, I am more likely to remember

a) what they looked like.

b) what they said about themselves.

36. When I am learning a new subject, I prefer to

a) stay focused on that subject, learning as much about it as I can.

b) try to make connections between that subject and related subjects.

37. I am more likely to be considered

a) outgoing.

b) reserved.

38. I prefer courses that emphasize

a) concrete material (facts, data).

b) abstract material (concepts, theories).

39. For entertainment, I would rather

a) watch television.

b) read a book.

40. Some teachers start their lectures with an outline of what they will cover. Such outlines are

a) somewhat helpful to me.

b) very helpful to me.

41. The idea of doing homework in groups, with one mark for the entire group,

a) appeals to me.

b) does not appeal to me.

42. When I am doing long calculations,

a) I tend to repeat all my steps and check my work carefully.

b) I find checking my work tiresome and have to force myself to do it.

43. I tend to picture places I have been

a) easily and fairly accurately.

b) with difficulty and without much detail.

44. When solving problems in a group, I would be more likely to

a) think of the steps in the solution process.

b) think of possible consequences or applications of the solution in a wide range of areas.

Thank you very much for your cooperation

ILS SCORING SHEET

1. Put "1"s in the appropriate spaces in the table below (e.g. if you answered "a" to Question 3, put a "1" in Column A by Question 3).

2. Total the columns and write the totals in the indicated spaces.

3. For each of the four scales, subtract the smaller total from the larger one. Write the difference (1 to 11) and the letter (a or b) for which the total was larger on the bottom line.

For example, if under "ACT/REF" you had 4 "a" and 7 "b" responses, you would write "3b" on the bottom line under that heading. At the back of this sheet there is an example of a completed questionnaire.

4. On the ILS Report Form, mark "X"s above your scores on each of the four scales.

ACT/REF	**SNS/INT**	**VIS/VRB**	**SEQ/GLO**
Q a b	Q a b	Q a b	Q a b
1 ___ ___	2 ___ ___	3 ___ ___	4 ___ ___
5 ___ ___	6 ___ ___	7 ___ ___	8 ___ ___
9 ___ ___	10 ___ ___	11 ___ ___	12 ___ ___
13 ___ ___	14 ___ ___	15 ___ ___	16 ___ ___
17 ___ ___	18 ___ ___	19 ___ ___	20 ___ ___
21 ___ ___	22 ___ ___	23 ___ ___	24 ___ ___
25 ___ ___	26 ___ ___	27 ___ ___	28 ___ ___
29 ___ ___	30 ___ ___	31 ___ ___	32 ___ ___
33 ___ ___	34 ___ ___	35 ___ ___	36 ___ ___
37 ___ ___	38 ___ ___	39 ___ ___	40 ___ ___
41 ___ ___	42 ___ ___	43 ___ ___	44 ___ ___
Total (sum 1's in each column)			
ACT/REF	**SNS/INT**	**VIS/VRB**	**SEQ/GLO**
a b	a b	a b	a b
___ ___	___ ___	___ ___	___ ___
(Larger – Smaller) + Letter of Larger			
_____	_____	_____	_____

Appendix A6: Feedback Session 1 Questions (13 September 2013)

The following questions were asked:

1. What has really helped you and what have you changed in your approach to learning FA III as a result of attending the enrichment tutorials?

   During the feedback, the discussion led to the following sub-questions:

   a. Before the tutorials did you ever consider that you could understand the IFRS and write it in your own words?
   b. What inspired you re-examine the content of the Framework?
   c. Is there anyone who has not yet re-examined the Framework?
   d. Before attending the enrichment tutorials would you have read the IFRS and tried to put it into your own words?
   e. Did you ever discuss FA III course content with class members or other peers?

2. Is there anything from the enrichment tutorials which you did not consider helpful?
3. What do you find frustrating about the FA III course?

   a. What difficulties have you experienced with the discipline-specific language used in FA III?
   b. Do you think it would be helpful for all FA students to complete a first year English course?

Appendix A7: Feedback Session 2 Questions (30 October 2013)

1. What did you do differently in respect of:
    a. Reading, analysing, planning and understanding a scenario?
    b. Exam technique, approach to a question. Did you integrate your workings into the solution as you worked through the question? How did this help you?
    c. Theory or discussion questions. What did you learn from doing the practice questions that were marked and from the written feedback that you received?
    d. How did you cope with exam stress?
    e. How did you cope with questions that you didn't understand or where you were uncertain?
    f. What was your experience of participating in the tutorials and working in groups?
2. What have you learned about yourself and your approach to studying FA III through the enrichment tutorials?
3. Do you have any suggestions for tutors and lecturers regarding their teaching?